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INTEGRATED INFORMATION
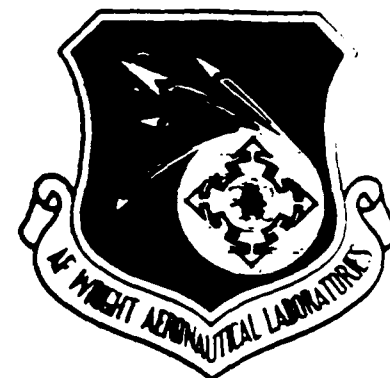SUPPORT SYSTEM (IISS)
Volume VIII - User Interface Subsystem
Part 6 - Form Processor Product Specification

General Electric Company
Production Resources Consulting
One River Road
Schenectady, New York 12345

Final Report for Period 22 September 1980 - 31 July 1985

November 1985

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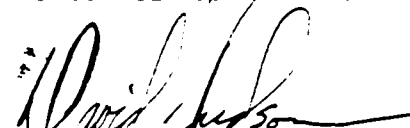AIR FORCE SYSTEMS COMMAND
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This technical report has been reviewed and is approved for publication.

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DATE 7 Aug 86

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The computer software contained herein are theoretical and or references that in no way reflect Air Force-owned or -developed computer software.

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19. ABSTRACT (Continue on reverse if necessary and identify by block number)

This specification establishes the detailed design of a computer program identified as the Form Processor (FP). The FP is a set of callable execution routines available to an application program for manipulating and displaying electronic forms. The FP routines allow programs and their users to communicate through predefined forms on a terminal.

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Integrated Information Support System (IISS)
Vol VIII - User Interface Subsystem
Part 6 - Form Processor Product Specification

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## PREFACE

This product specification covers the work performed under Air Force Contract F33615-80-C-5155 (ICAM Project 6201). This contract is sponsored by the Materials Laboratory, Air Force Systems Command, Wright-Patterson Air Force Base, Ohio. It was administered under the technical direction of Mr. Gerald C. Shumaker, ICAM Program Manager, Manufacturing Technology Division, through Project Manager, Mr. David Judson. The Prime Contractor was Production Resources Consulting of the General Electric Company, Schenectady, New York, under the direction of Mr. Alan Rubenstein. The General Electric Project Manager was Mr. Myron Hurlbut of Industrial Automation Systems Department, Albany, New York.

Certain work aimed at improving Test Bed Technology has been performed by other contracts with Project 6201 performing integrating functions. This work consisted of enhancements to Test Bed software and establishment and operation of Test Bed hardware and communications for developers and other users. Documentation relating to the Test Bed from all of these contractors and projects have been integrated under Project 6201 for publication and treatment as an integrated set of documents. The particular contributors to each document are noted on the Report Documentation Page (DD1473). A listing and description of the entire project documentation system and how they are related is contained in document FTR620100001, Project Overview.

The subcontractors and their contributing activities were as follows:

### TASK 4.2

| Subcontractors | Role |
|---|---|
| Boeing Military Aircraft Company (BMAC) | Reviewer |
| D. Appleton Company (DACOM) | Responsible for IDEF support, state-of-the-art literature search |
| General Dynamics/ Ft. Worth | Responsible for factory view function and information models |

| Subcontractors | Role |
|---|---|
| Illinois Institute of Technology | Responsible for factory view function research (IITRI) and information models of small and medium-size business |
| North American Rockwell | Reviewer |
| Northrop Corporation | Responsible for factory view function and information models |
| Pritsker and Associates | Responsible for IDEF2 support |
| SofTech | Responsible for IDEF0 support |

## TASKS 4.3 - 4.9 (TEST BED)

| Subcontractors | Role |
|---|---|
| Boeing Military Aircraft Company (BMAC) | Responsible for consultation on applications of the technology and on IBM computer technology. |
| Computer Technology Associates (CTA) | Assisted in the areas of communications systems, system design and integration methodology, and design of the Network Transaction Manager. |
| Control Data Corporation (CDC) | Responsible for the Common Data Model (CDM) implementation and part of the CDM design (shared with DACOM). |
| D. Appleton Company (DACOM) | Responsible for the overall CDM Subsystem design integration and test plan, as well as part of the design of the CDM (shared with CDC). DACOM also developed the Integration Methodology and did the schema mappings for the Application Subsystems. |

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| Subcontractors | Role |
|---|---|
| Digital Equipment Corporation (DEC) | Consulting and support of the performance testing and on DEC software and computer systems operation. |
| McDonnell Douglas Automation Company (McAuto) | Responsible for the support and enhancements to the Network Transaction Manager Subsystem during 1984/1985 period. |
| On-Line Software International (OSI) | Responsible for programming the Communications Subsystem on the IBM and for consulting on the IBM. |
| Rath and Strong Systems Products (RSSP) (In 1985 became McCormack & Dodge) | Responsible for assistance in the implementation and use of the MRP II package (PIOS) that they supplied. |
| SofTech, Inc. | Responsible for the design and implementation of the Network Transaction Manager (NTM) in 1981/1984 period. |
| Software Performance Engineering (SPE) | Responsible for directing the work on performance evaluation and analysis. |
| Structural Dynamics Research Corporation (SDRC) | Responsible for the User Interface and Virtual Terminal Interface Subsystems. |

Prime contractors under other projects who have contributed to Test Bed Technology, their contributing activities and responsible projects are as follows:

| Contractors | ICAM Project | Contributing Activities |
|---|---|---|
| Boeing Military Aircraft Company (BMAC) | 1701, 2201, 2202 | Enhancements for IBM node use. Technology Transfer to Integrated Sheet Metal Center (ISMC) |

| Contractors | ICAM Project | Contributing Activities |
|---|---|---|
| Control Data Corporation (CDC) | 1502, 1701 | IISS enhancements to Common Data Model Processor (CDMP) |
| D. Appleton Company (DACOM) | 1502 | IISS enhancements to Integration Methodology |
| General Electric | 1502 | Operation of the Test Bed and communications equipment. |
| Hughes Aircraft Company (HAC) | 1701 | Test Bed enhancements |
| Structural Dynamics Research Corporation (SDRC) | 1502, 1701, 1703 | IISS enhancements to User Interface/Virtual Terminal Interface (UI/VTI) |
| Systran | 1502 | Test Bed enhancements. Operation of Test Bed. |

## TABLE OF CONTENTS

## FIGURES

## SECTION 1

### SCOPE

1.1  Identification

This specification establishes the detailed design of a computer program identified as the Form Processor, hereinafter referred to as the FP.  The FP is one configuration item of the Integrated Information Support System (IISS) User Interface (UI).

1.2  Functional Summary

One of the objectives of the IISS testbed is to allow applications to be run from a wide variety of terminals using formatted screens for input and output of application data. Instead of the application programs having to contain terminal dependent code to send/receive formatted screens to/from various types of terminals and to perform terminal control functions, the program may use the set of callable execution time routines of the FP.

The major functions of the FP are:

1. Opening and displaying a form, a template defining fields and their attributes.

2. Placing data into a form and/or into a form message line.

3. Sending the form to the terminal.

4. Reading the data from the terminal.

5. Stacking/replacing forms currently open for the application program.

6. IISS logon processing.

7. NTM message processing.

8. Window management processing.

SECTION 2

DOCUMENTS

2.1  Reference Documents

[1]  Structural Dynamics Research Corporation, Application
     Interface Product Specification, PS 620144700 , 1
     November 1985.

[2]  Structural Dynamics Research Corporation, Forms
     Driven Form Editor Product Specification,
     PS 620144402 , 1 November 1985.

[3]  Structural Dynamics Research Corporation, Forms
     Language Compiler Product Specification,
     PS 620144401 , 1 November 1985.

[4]  Structural Dynamics Research Corporation, Text Editor
     Product Specification, PS 620144600 ,1 November 1985.

[5]  Structural Dynamics Research Corporation, Rapid
     Application Generator Product Specification,
     PS 620144502 , 1 November 1985.

[6]  Structural Dynamics Research Corporation, Report
     Writer Product Specification, PS 620144501 ,
     1 November 1985.

[7]  Structural Dynamics Research Corporation, User
     Interface Services Product Specification,
     PS 620144100 , 1 November 1985.

[8]  Structural Dynamics Research Corporation, Virtual
     Terminal Product Specification, PS 620144300 ,
     1 November 1985.

[9]  Structural Dynamics Research Corporation, Form
     Processor Development Specification, DS 620144200B,
     1 November 1985.

[10] Structural Dynamics Research Corporation, Form
     Processor User Manual, UM 620144200B, 1 November
     1985.

1

Device Drivers: (DD), software modules written to handle I/O for a specific kind of terminal. The modules map terminal specific commands and data to a neutral format. Device Drivers are part of the UI Virtual Terminal.

Display List: is similar to the open list, except that it contains only those forms that have been added to the screen and are currently displayed on the screen.

Display Size: the number of lines used in the edit area.

Extended Binary Coded Decimal Interchange Code: (EBCDIC), the character set used by a few computer vendors (notably IBM) instead of ASCII.

External Schema: (ES), an application's view of the CDM's conceptual schema.

Field: two dimensional space on a terminal screen.

Field Pointer: indicates the ITEM which contains the current cursor position.

Form: structured view which may be imposed on windows or other forms. A form is composed of fields. These fields may be defined as forms, items, and windows.

Form Definition: (FD), forms definition language after compilation. It is read at runtime by the Form Processor.

Forms Definition Language: (FDL), the language in which electronic forms are defined.

Forms Driven Form Editor: (FDFE), subset of the FE which consists of a forms driven application used to create Form Definition files interactively.

Form Editor: (FE), subset of the IISS User Interface that is used to create definitions of forms. The FE consists of the Forms Driven Form Editor and the Forms Language Compiler.

Form Hierarchy: a graphic representation of the way in which forms, items and windows are related to their parent form.

Forms Language Compiler: (FLAN), subset of the FE that
consists of a batch process that accepts a series of forms
definition language statements and produces form definition
files as output.

Form Processor: (FP), subset of the IISS User Interface
that consists of a set of callable execution time routines
available to an application program for form processing.

Form Processor Text Editor: (FPTE), subset of the Form
Processor that consists of software modules that provide text
editing capabilities to all users of applications that use the
Form Processor.

Integrated Information Support System: (IISS), a test
computing environment used to investigate, demonstrate and test
the concepts of information management and information
integration in the context of Aerospace Manufacturing. The IISS
addresses the problems of integration of data resident on
heterogeneous data bases supported by heterogeneous computers
interconnected via a Local Area Network.

Item: non-decomposable area of a form in which hard-coded
descriptive text may be placed and the only defined areas where
user data may be input/output.

Logical Device: a conceptual device which to an application
is indistinguishable from a physical device and is then mapped
to part or all of a physical device.

Message: descriptive text which may be returned in the
standard message line on the terminal screen. They are used to
warn of errors or provide other user information.

Message Line: a line on the terminal screen that is used to
display messgaes.

Network Transaction Manager: (NTM), IISS subsystem that
performs the coordination, communication and housekeeping
functions required to integrate the Application Processes and
System Services resident on the various hosts into a cohesive
system.

Open List: a list of all the forms that have been and are
currently open for an application process.

Operating System: (OS), software supplied with a computer which allows it to supervise its own operations and manage access to hardware facilities such as memory and peripherals.

Page: instance of forms in windows that are created whenever a form is added to a window.

Paging and Scrolling: a method which allows a form to contain more data than can be displayed with provisions for viewing any portion of the data buffer.

Physical Device: a hardware terminal.

Presentation Schema: (PS), may be equivalent to a form. It is the view presented to the user of the application.

Previous Cursor Position: the position of the cursor when the previous edit command was issued.

Qualified Name: the name of a form, item or window preceded by the hierarchy path so that it is uniquely identified.

Report Definition Language: an extension of the Forms Definition Language that includes retrieval and calculation of database information and is used to define reports.

Subform: a form that is used within another form.

User Data: data which is either input by the user or output by the application programs to items.

User Interface: (UI), IISS subsystem that controls the user's terminal and interfaces with the rest of the system. The UI consists of two major subsystems: the User Interface Development System (UIDS) and the User Interface Management System (UIMS).

User Interface Development System: (UIDS), collection of IISS User Interface subsystems that are used by applications programmers as they develop IISS applications. The UIDS includes the Form Editor and the Application Generator.

User Interface Management System: (UIMS), the runtime UI. It consists of the Form Processor, Virtual Terminal, Application Interface, the User Interface Services and the Text Editor.

User Interface Monitor: (UIM), part of the Form Processor
that handles messaging between the NTM and the UI.  It also
provides authorization checks and initiates applications.

User Interface/Virtual Terminal Interface: (UI/VTI),
another name for the User Interface.

Virtual Terminal: (VT), subset of the IISS User Interface
that performs the interfacing between different terminals and
the UI.  This is done by defining a specific set of terminal
features and protocols which must be supported by the UI
software which constitutes the virtual terminal definition.
Specific terminals are then mapped against the virtual terminal
software by specific software modules written for each type of
real terminal supported

Virtual Terminal Interface: (VTI), the callable interface
to the VT.

Window: dynamic area of a terminal screen on which
predefined forms may be placed at run time.

Window Manager: a facility which allows the following to be
manipulated: size and location of windows, the device on which
an application is running, the position of a form within a
window.  It is part of the Form Processor.

## SECTION 3

### REQUIREMENTS

#### 3.1  Structural Description

The overall structure of the Form Processor is based on a
User Interface Monitor which interprets the Application
Interface messages in order to call the appropriate Form
Processor routine.  All the FP callable routines are at the same
level in the hierarchical structure of the FP CPCI.

#### 3.2  Functional Flow

Figure 3-1 is a data flow diagram of the Form Processor.
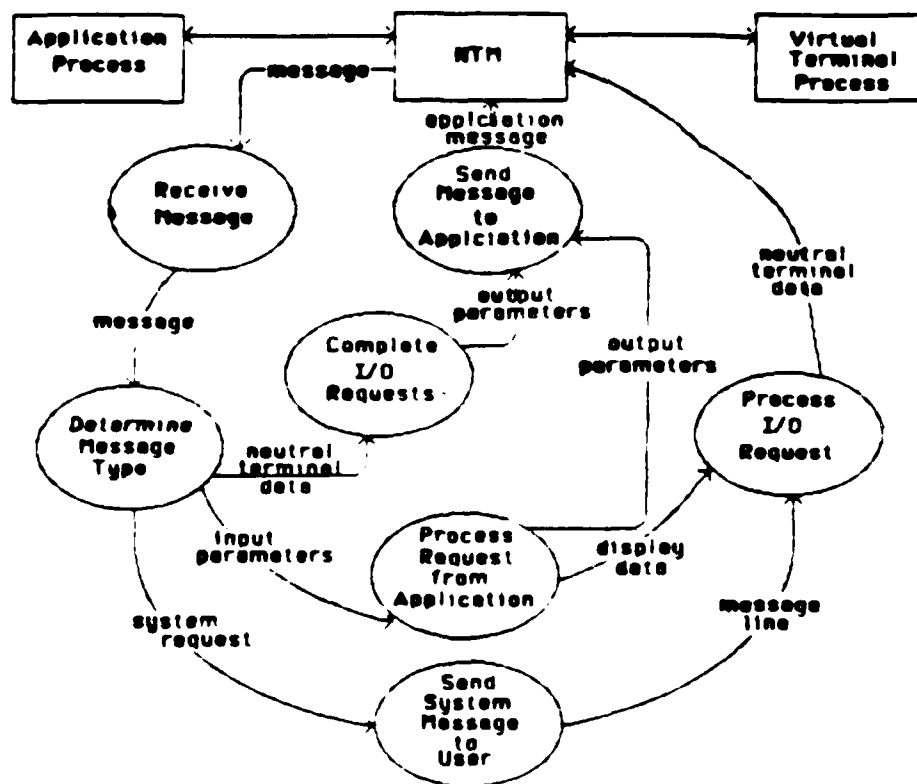


Figure 3-1 Form Processor Data Flow

## 3.3  Interfaces

The FP interfaces with the NTM through its UIM, with the AI through its UIM and callable routines, and with the VT through the VT Form Processor callable routines.  In addition, two different methods of interfacing to an AP are supported:  stand alone, when the AP may link directly to the FP and no NTM is being used, or the IISS environment, when the AP may link to the Application interface (AI) routines.  In either environment, the application programs use the exact same interface to the FP. Linking to the FO directly is simpler and more efficient than using the AI but does not support the use of an NTM: direct linking is most useful for testing purposes.

The UIM part of the FP only exists when the NTM is being used.  The UIM receives the message formatted by the AI and translates it into the appropriate FP callable routine to permit the sending or receiving of the forms.  The FP routines then interface with the VT by translating an application request into the appropriate VT command when input/output is necessary.

```
+-------------------------------+
|                               |
|       FDL Compiler            |
|                               |
+-------------------------------+
           |
           |                  +---------------------------+
       +-----------------|    |                           |
                         |    |     Form Definition        |
                         |    |           Files            |
                         |    +---------------------------+
                                           |
                                           |
+-------------------------------+          |
|                               |          |
|       Application             |          |
|         Program               |          |
+-------------------------------+          |
|                               |          |
|           FP                  |          |
|    callable routines          +----------+
|                               |
+-------------------------------+
|                               |
|           VT                  |
|                               |
+-------------------------------+
```
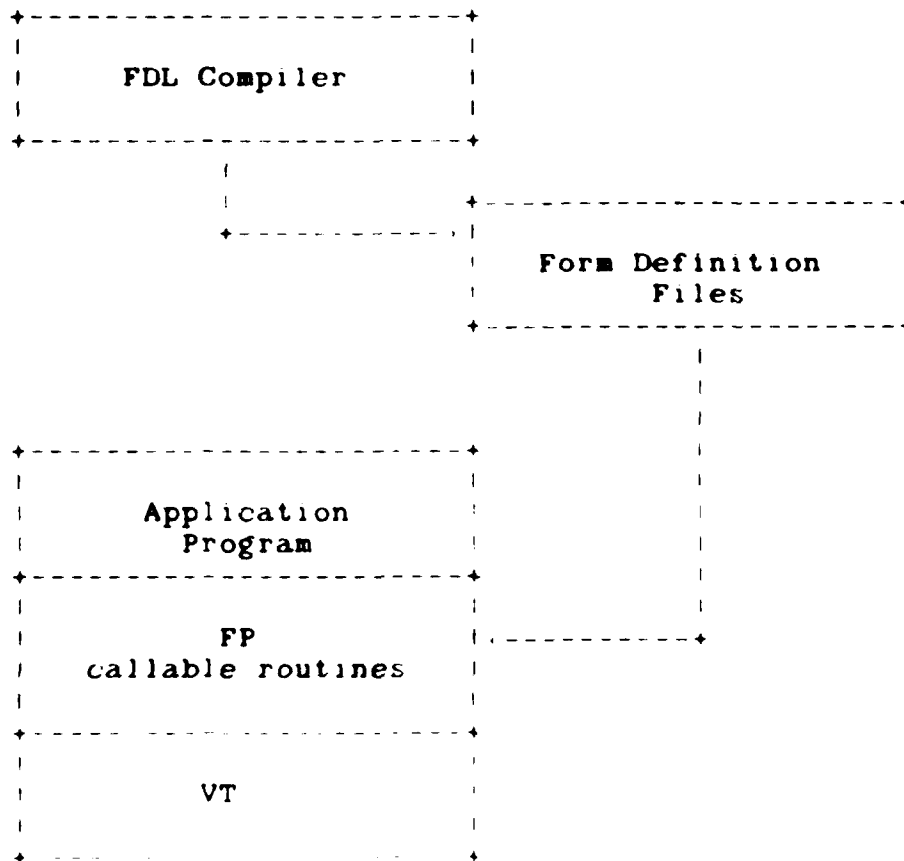
Figure 3-2  FP Stand Alone (non IISS environment)

3-3

```
          +----------------------------+
          |    DEVICE DRIVER           |
          |       (DD)                 |
          +----------------------------+
          |    VIRTUAL TERMINAL        |
          |    DEVICE DRIVER           |
          |      (VT/DD)               |
          +----------------------------+
                |      ^
                |      |
                V      |
          +----------------------------+
          |                            |
          |    NETWORK                 |        +---+------------------+
+------------------+  TRANSACTION       +------| A |                  |
| +--------------+ |  MANAGER           |      | I |  ARTEST          |
| | +----------+ |  (NTM)              |<-----|   |                  |
| | | +--------+-+----------------------+      +---+------------------+
| | | |      +----------------------------+
| | | |      |                            |        +------------+
| | | +------+  FORMS            +        +--|   FDL      |
| | fp requests |  PROCESSOR         |        |  | COMPILER   |
| | +----------+  User Interface    |        |  +------------+
| |        |      Monitor (UIM)      |        V
| |        +----------------------------+        +------------------+
| |        |  FORM PROCESSOR      |  |      FORM          |
| |        |  Callable Routines   |<----+  DESCRIPTION     |
| |        +----------------------------+  |      FILES         |
| +------------+      |                     +------------------+
|  VT  requests |  VIRTUAL TERMINAL  |
+------------+ |      (VT)           |
              +----------------------------+
```
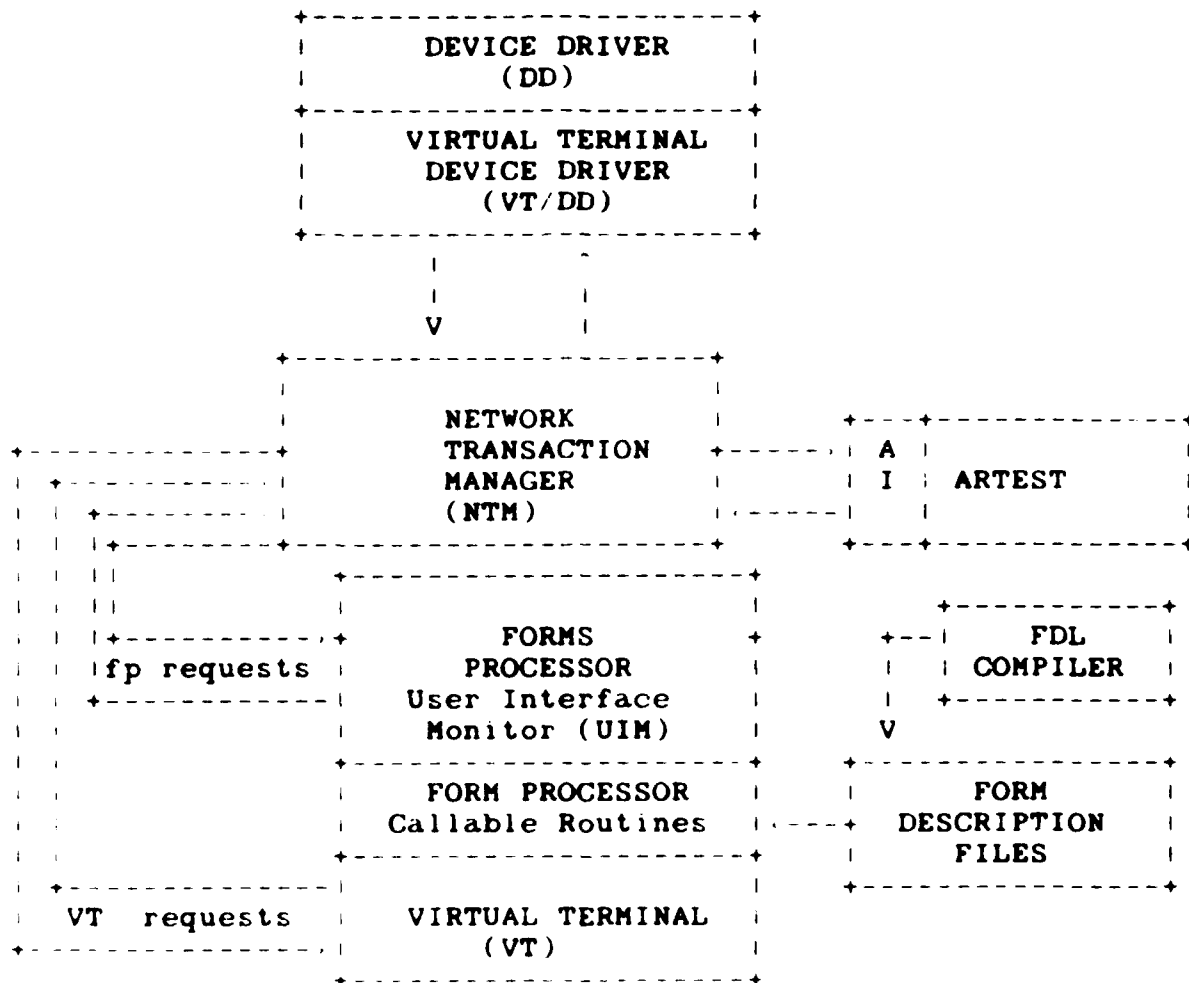
Figure 3-3  FP in IISS Environment

3 3 1  Application

The FP interface for IISS applictions is the set of
callable execution time routines available for an application
program for form processing  These routines are defined in the
IISS Form Processor User s Manual (UM 620144200B).  The FP
routines allow application programs and their users to
communicate through predefined forms on a terminal  Again the
application may directly interface with the FP through the FP
routines or through the AI routines  In either case, the
calling sequence is exactly the same

3 4

### 3.3.2 Virtual Terminal

The FP interfaces with the Virtual Terminal (VT) by means of using the VT callable routines. Use of these routines is only necessary when initializing the FP (INITFP), terminating the FP (TERMFP), and outputting data to and receiving data from the terminal (OISCR, OUTSCR).

### 3.3.3 Forms Definition Language

The FP interfaces with the FDL by use of the Forms Definition File. This file contains the binary definition of the forms that the FP may use. It simply reads in a form by form name once an Open Form request is issued for a given form.

### 3.4 Program Interrupts

This section does not apply to the detailed design of the Form Processor.

### 3.5 Timing and Sequencing Description

Timing and sequencing for the control logic involved in referencing each CPC of the Form Processor is based on the sending of AI messages by application programs and the delivery of these messages through the NTM to the UIM of the FP. These messages are processed on a first come, first processed basis.

### 3.6 Special Control Features

The detailed design of the Form Processor does not include any special control features as defined in the ICAM Documentation Standards manual.

### 3.7 Storage Allocation

The Form Processor executable is 423 blocks. The FP allocates memory for form elements at run time. The amount of memory used depends upon the number of open forms and the number of fields on these forms

### 3.7.1 Data Base Definition

Section 3.2.3 of the Form Processor Development Specification (DS 620144200B) describes the FP internal data structures

### 3.7.1.1  File Descriptions

Form Definition files are the only external data used by the FP.

1.  FILE NAME:  formname.FD - Form Definition file.  A complete description of the Form Definition file which is a binary file is contained in Appendix B of the Forms Language Compiler Development Specification (DS 620144401B).  The name of this file is dependent upon the form it describes.

    PURPOSE:  This file contains information about the structure and attributes of a form that is used a run time by the FP.

    DECLARATION:

```
typedef struct        /* version number record */
   {
   char rectyp;       /* '1' */
   int  vernum;       /* current version number (2) */
   char linefeed;
   } VERREC;

typedef struct        /* form record */
   {
   char  form_name[10];    /* form name */
   char  background[10];   /* background name */
   short row;              /* starting row */
   short col;              /* starting col */
   short width;            /* width */
   short depth;            /* depth */
   short n_txtflds;        /* number of text fields */
   short n_datflds;        /* number of data fields */
   short s_txtbuf;         /* size of the text buffer */
   short s_defbuf;         /* size of the default buffer */
   char  linefeed;
   } FRMREC;

typedef struct        /* text record */
   {
   short row;         /* starting row */
   short col;         /* starting col */
   short len;         /* total length */
   char  linefeed;
   } TXTREC;
```

```
typedef struct          /* field record */
    {
    char   fld_name[10];   /* field name */
    char   fld_type;       /* field type (F, I, W, A) */
    short  row;            /* starting row */
    short  col;            /* starting col */
    short  width;          /* field width */
    short  depth;          /* field depth */
    int    min_value;      /* minimum value (if any) */
    int    max_value;      /* maximum value (if any) */
    char   helpline[80];   /* help text */
    char   disp_att[10];   /* display attribute */
    short  n_formats;      /* number of formats */
    char   format[12][2];  /* format strings */
    short  n_arydefs;      /* number of dimensions */
    struct          /* dimension specification */
        {
        char   dir;           /* repeat direction (H, V) */
        short  cnt;           /* actual repeat count */
        short  sp;            /* number of spaces between
                                 repetitions */
        short  dsp_size;      /* display repeat count */
        } array_def[3];
    char   linefeed;
    } FLDREC;

typedef struct {          /* run time relative positioning
                             info */
    POS posnod;
    NAME mynam, hnam, vnam;
    } RELREC;
```

## 3.8  Object Code Creation

The FP routines were compiled with a C compiler developed
by Interactive Software under VAX/VMS.  The source is portable
to other compilers on machines such as the IBM.

## 3.9  Adaptation Data

The FP source can be compiled using any UNIX version 7
compatible C compiler.

## 3.10  Detailed Design Description

### 3.10.1  Main Program List

The following is a list of all "Main Programs" which
are modules that are not called by any other module being
documented here.  These modules are either program entry points
or, if they are hooked into another set of programs via
subroutine calls, they are the points the external programs can
call and therefore enter through.  To differentiate between the
two types of entry points, look at the individual Module
Documentation (section 3.10.8) and look at Module Type for each
of the Main Program modules listed.  Note whether the routine
is a Program, Subroutine, or Function.  If it is a Program, it
is truly a main program entry point.  If not, then it is merely
called by other programs not being documented here.

FORM PROCESSOR Main Program List

| Module Name | Purpose |
| ----------- | ------- |
| GARPOS | GET ARRAY OFFSET POSITION OF FIELD |
| MONITR/MAIN | MAIN MODULE FOR MONITOR/UIS/FP PROCESS |
| PRNDSP | PRINT DISPLAY LIST |
| PRNOPN | PRINT OPEN LIST |
| PRNUID | PRINT UID |
| PRNUSR | PRINT USER |

3.10.2  <u>Module List</u>

The following is a list of all the modules being
documented here along with their purpose.  Each module has a
unique name, no matter what language it was written in.

FORM PROCESSOR Module List

| Module Name | Purpose |
| ----------- | ------- |
| ACRPOS | ABSOLUTIZE CURSOR POSITION OF FIELD |
| ADDELM | ADD ELEMENT |
| ADDFRM | ADD FORM TO WINDOW |
| ADJSTR | ADJUST FORM PROCESSOR STRUSCTURE |
| CALLFP | CALL FP ROUTINES |
| CANITM | CANONICALIZE ITEM |
| CHGLDV | CHANGE LOGICAL DEVICE |
| CHGPRC | CHANGE PRECEDENCE OF WINDOW OR LOGICAL DEVICE |
| CLSFRM | CLOSE FORM |
| CLSLDV | CLOSE LOGICAL DEVICE |
| CMPFLD | COMPUTE FIELD |
| CMPFLD/EVAL | EVALUATE FIELD EXPRESSION |
| COPFLD | COPY FIELD |
| COPFLD/CPYFLD | INTERNAL COPY FIELD |
| COPFRM | COPY FORM |
| CURPOS | GET CURSOR POSITION |
| CURPOS/FNDCP | FIND CURSOR POSITION |
| DBCFNC | CHECK FUNCTION |
| DBCROL | CHECK ROLE |
| DELFLD | DELETE FIELD |

FORM PROCESSOR Module List

| Module Name | Purpose |
| --- | --- |
| DELFLD/DELEXP | DELETE EXPRESSION |
| ESCPY | EXTERNAL STRING COPY |
| FNDFLD | FIND FIELD |
| FNDMSG | FIND MESSAGE |
| FNDMSG/CODSCH | CODE SEARCH |
| FNDMSG/OUMSGF | OPEN USER MESSAGE FILE |
| FNFPWN | FIND FORM PROCESSOR WINDOW |
| FUISWN | FIND UIS WINDOW |
| GARPOS | GET ARRAY OFFSET POSITION OF FIELD |
| GATDEF | GET ATTRIBUTE DEFINITION |
| GDATA | GET DATA |
| GDATA/GETBUF | GET BUFFER |
| GDATLN | GET DATA LENGTH |
| GDATLN/GBUFLN | GET BUFFER LENGTH |
| GDVINP | GET DEVICE INPUT |
| GETATT | GET ATTRIBUTE |
| GETBAK | GET BACKGROUND ATTRIBUTE |
| GETCUR | GET CURSOR POSITION |
| GETCUR/CONCAT | CONCATENATE STRING TO CURRENT NAME |
| GOFPTR | GET OPEN FROM POINTER |
| GPAGE | GET PAGE |

FORM PROCESSOR Module List

| Module Name | Purpose |
| ----------- | ------- |
| GWINDO | GET WINDOW |
| INITVT | INITIAL VIRTUAL TERMINAL INTERFACE |
| INQLDV | INQUIRE LOGICAL DEVICE |
| INSCR | INPUT SCREEN |
| MABSAT | MAP ABSOLUTE ATTRIBUTE |
| MAKAP | MAKE APLICATION STRUTURE |
| MAKFLD | MAKE FIELD |
| MAKFPD | MAKE FORM PROCESSOR DATA (LOGICAL DEVICE STRUCTURE) |
| MAKPD | MAKE PHYSICAL DEVICE STRUCTURE |
| MAKUSR | MAKE USER |
| MONITR/GETPD | GET PHYSICAL DEVICE |
| MONITR/MAIN | MAIN MODULE FOR MONITOR/UIS/FP PROCESS |
| OISCR/ADDCMD | ADD COMMAND TO BUFFER |
| OISCR/CMPALL | COMPUTE ALL CALCULATED FIELDS |
| OISCR/CNGMSG | CHECK FOR AND PROCESS CHANGE MESSAGE REQUESTS |
| OISCR/DSPSCR | DISPLAY SCREEN |
| OISCR/EVTBUF | EMPTY VTI BUFFER |
| OISCR/FVTBUF | FILL VTI BUFFER |
| OISCR/GATINF | GET ATTRIBUTE INFO |
| OISCR/PROCFLD | PROCESS FIELD |

FORM PROCESSOR Module List

| Module Name | Purpose |
| --- | --- |
| OISCR/PROCWIN | PROCESS WINDOW |
| OISCR/RSTINP | RESET INPUT FLAGS |
| OISCR/RSTMAT | RESET TEMPORAY ATTRIBUTES |
| OISCR/SETWIN | SET WINDOW |
| ONWISC | OUTPUT (NO WAIT) / INPUT SCREEN |
| OPNFRM | OPEN FORM |
| OPNFRM/BDBUFF | BUILD DEFAULT BUFFER |
| OPNFRM/BFLDDB | BUILD FIELD DEFAULT BUFFER |
| OPNFRM/BRPNOD | BUILD RELATIVE POSITION NODE |
| OPNFRM/BTBUFF | BUILD TEXT BUFFER |
| OPNFRM/PARY | PROCESS ARRAY |
| OPNFRM/PDREC | PROCESS FIELD RECORD |
| OPNFRM/PFREC | PROCESS FORM RECORD |
| OPNFRM/PFRM | PROCESS FORM |
| OPNFRM/PITM | PROCESS ITEM |
| OPNFRM/PTREC | PROCESS TEXT RECORD |
| OPNFRM/PWIN | PROCESS WINDOW |
| OPNLDV | OPEN LOGICAL DEVICE |
| OUTSCR | OUTPUT SCREEN |
| PARFQN | PARSE FULLY QUALIFIED NAME |
| PDATA | PUT FORM DATA |

FORM PROCESSOR Module List

| Module Name | Purpose |
| ----------- | ------- |
| PDATA/PUTBUF | PUT BUFFER |
| PDVOTP | PUT DEVICE OUTPUT |
| PMSGLC | PUT MESSAGE LINE CODE |
| PMSGLS | PUT MESSAGE LINE STRING |
| POSCUR | POSITION CURSOR |
| POSCUR FNFITM | FIND FIRST ITEM OF FIELD |
| PRNAP | PRINT APLICATION |
| PRNDSP | PRINT DISPLAY LIST |
| PRNFLD | PRINT FIELD |
| PRNOPN | PRINT OPEN LIST |
| PRNPD | PRINT PHYSICAL DEVICE |
| PRNUID | PRINT UID |
| PRNUSR | PRINT USER |
| PTHPTR | GET PATH POINTER |
| PTHPTR/ARRAY | PROCESS ARRAY |
| PTHPTR FIELD | MATCH FIELD |
| PTHPTR/FORM | PROCESS FORM |
| PTHPTR/FOUND | HAS ANYTHING BEEN FOUND? |
| PTHPTR/ITEM | PROCESS ITEM |
| PTHPTR/WINDOW | PROCESS WINDOW |
| PUTATT | PUT ATTRIBUTES |

FORM PROCESSOR Module List

| Module Name | Purpose |
| --- | --- |
| PUTATT/AABSAT | ATTRIBUTE ABSOLUTE SET ATTRIBUTE |
| PUTBAK | PUT BACKGROUND ATTRIBUTES |
| PUTCUR | PUT CURSOR |
| PUTLOC | PUT LOCATION |
| RMVAP | REMOVE APPLICATION |
| RMVFPD | REMOVE FORM PROCESSOR DATA STRUCTURE |
| RMVPAG | REMOVE PAGE |
| RMVPD | REMOVE PHYSICAL DEVICE DATA STRUCTRUE |
| RPLFRM | REPLACE FORM |
| RSVATT | RESOLVE ATTRIBUTE |
| RSVATT RSVRST | RESOLVE REST |
| RSVEXP | RESOLVE EXPRESSIONS |
| RSVEXP BLDEXP | BUILD EXPRESSION TREE |
| SFPDAP | SET FORM PROCESSOR DATA STRUCTURE FOR APLICATION |
| STUPFP | SET UP FORM PROCESSOR DATA STRUCTURES |
| SYSMSG | SYSTEM MESSAGE ROUTINE |
| TERMVT | TERMINATE VIRTUAL TERMINAL INTERFACE |
| TRMDRV | TERMINATE DEVICE DRIVER |
| TRMUSR | TERMINATE USER |
| UIS | USR INTERFACE SERVICES |

FORM PROCESSOR Module List

| Module Name | Purpose |
| --- | --- |
| UIS FLWINF | FILL WINDOW INFORMATION |
| UIS FLWNST | FILL WINDOW MANAGER STRUCTURE |
| UIS PRCINP | PRCESS INPUT |
| UIS PRCWND | PRCESS WINDOW |
| UIS STRTAP | START APPLICATION |
| UIS STRTPD | START PHYSICAL DEVICE |
| ULKFPD | UNLINKK FPD |

3 10 3  External Routines List

The following is a list of all routines or functions not documented here that are called by modules that are documented here   The first caller, in alphabetical order, is listed as well   The specification in which any module is documented may be found in the Module Documentation Index (Document Number CM 620100001)   See section 3 10 6 for a list of the modules that call each of these external routines

FORM PROCESSOR External Routines List

| Module Name | First User |
| --- | --- |
| ABORT | OPNFRM/BRPNOD |
| ABS | OISCR/PROCWIN |
| ATOI | MAKAP |
| BLDCMD | MONITR/MAIN |
| BLEN | COPFLD/CPYFLD |
| CALLOC | MAKAP |
| CBIT | DELFLD |
| CBPTR | PDATA/PUTBUF |
| CFREE | MAKAP |
| DBCLSE | MONITR/MAIN |
| DBCOM | UIS/STRTAP |
| DBCUPR | UIS |
| DBGAPD | UIS/STRTAP |
| DBOPEN | MONITR/MAIN |
| DOATTR | PRNFLD |
| DOITEM | PRNFLD |
| DOWIND | PRNFLD |
| DSPMSG | RMVAP |
| ERRPRO | SYSMSG |
| FCLOSE | RMVPD |
| FEOF | OPNFRM/BDBUFF |
| FERROR | OPNFRM/BRPNOD |
| FFBCA | COPFLD/CPYFLD |
| FOPEN | UIS/STRTPD |
| FPRINTF | MONITR/MAIN |
| FREAD | OPNFRM/PTREC |
| FREE | GETCUR |
| FREMSG | RMVFPD |
| FSEARCH | UIS/STRTPD |
| FSEEK | MONITR/MAIN |
| FTELL | GDVINP |
| FWRITE | PDVOTP |
| GETC | OPNFRM/BTBUFF |
| GETW | MONITR/MAIN |
| GVTICMD | MONITR/MAIN |
| GVTINW | CALLFP |
| INITAL | MONITR/MAIN |
| ISALNUM | PTHPTR |
| ISCNTRL | OPNFRM/BTBUFF |
| ISDIGIT | PTHPTR |
| ISEND | UIS/STRTAP |

FORM PROCESSOR External Routines List

| Module Name | First User |
| ----------- | ---------- |
| ISPRINT | PMSGLS |
| LOCALTIME | OISCR/DSPSCR |
| MALLOC | OPNFRM/PITM |
| MATOI | UIS/PRCINP |
| MAX | RMVPAG |
| MEMCMP | UIS/FLWNST |
| MEMCPY | PARFQN |
| MEMSET | GDVINP |
| MIN | CALLFP |
| NSEND | MONITR/MAIN |
| OBIND | DBCROL |
| ODFINN | DBCFNC |
| OEXEC | DBCROL |
| OFETCH | DBCROL |
| OSQL3 | DBCFNC |
| PBPTR | COPFLD/CPYFLD |
| PFINP | INSCR |
| PRINTF | PRNUSR |
| PUTC | MONITR/MAIN |
| PUTW | MONITR/MAIN |
| RCV | MONITR/MAIN |
| REWIND | FNDMSG/CODSCH |
| SBIT | MAKAP |
| SIGABT | TRMUSR |
| SNDVTI | CALLFP |
| SPRINTF | OPNFRM |
| STRASN | OPNFRM/PWIN |
| STRCAT | OISCR/PROCFLD |
| STRCHR | PARFQN |
| STRCMP | MONITR/GETPD |
| STRCPY | MAKFLD |
| STRLEN | OISCR/FVTBUF |
| STRNCMP | FNDMSG |
| STRNCPY | ESCPY |
| STRNLOC | CANITM |
| STRNUPC | CANITM |
| STRRCHR | PARFQN |
| STRUPC | COPFRM |
| TIME | OISCR/DSPSCR |
| TOUPPER | PTHPTR |
| TRMNAT | MONITR/MAIN |

### 3.10.4  Include File List

The following is a list of all include files called in
by modules being documented here.  Each include file has a
unique name regardless of the language being used.  The purpose
of each include file is listed as well.  A more complete
description of each include file is given in section 3.10.9.
The purpose listed is the one that is in the source code of the
include file.

A purpose of "**** PURPOSE NOT FOUND BY STRIPPER ****"
indicates that a purpose statement was not written into the
include file itself.  The most common reason for this is that
the include file comes from system libraries that were not
developed by the project, such as 'C' libraries that are
provided with the 'C' compiler.

See section 3.10.6 for a set of lists which show all
the modules which call in each of these include files.

FORM PROCESSOR Include File List

| File Name | Purpose |
| --------- | ------- |
| BITS | INCLUDE FILE FOR BIT MANIPULATION ROUTINES |
| CICODE | Command Interpreter CODEs |
| CTLCHR | CONTROL CHARACTERS |
| CTYPE | **** PURPOSE NOT FOUND BY STRIPPER **** |
| CURSORI | CURSOR description |
| DBASEI | DATABASE ITERFACE |
| FFFV2 | FORM FILE FORMAT - VERSION 2 |
| FPCODE | FORM PROCESSOR RETURN CODES |
| FPD | FORM PROCESSOR DATA |
| FPDINI | FPD INITIALIZATION |
| FPEMSG | FORM PROCESSOR ERROR MESSAGES |
| FPPARM | FORM PROCESSOR PARAMETERS |
| FUNCTS | FUNCTION DEFINITIONS |
| NTM | NTM INTERFACE INCLUDE FILE |
| ORACLE | data delcarations for programs that access ORACLE |
| ORCODE | ORacle CODEs |
| STDIO | **** PURPOSE NOT FOUND BY STRIPPER **** |
| STDTYP | STANDARD TYPE DEFINITIONS |
| TIME | **** PURPOSE NOT FOUND BY STRIPPER **** |
| UISFM | UIS FORM |
| VTICOM | VTI COMMUNICATION DEFINITIONS |

### 3.10.5  Where Include File Used List

The following lists each include file from 3.10.4 and all the modules documented in this specification which include them.  The purpose of each module is listed as well.

FORM PROCESSOR Where-include-file-used List

| Include File | Module Name | Module Purpose |
|---|---|---|
| BITS | | |
| | COPFLD | COPY FIELD |
| | COPFLD/CP | INTERNAL COPY FIELD |
| | DELFLD | DELETE FIELD |
| | DELFLD/DE | DELETE EXPRESSION |
| CICODE | | |
| | DBCFNC | CHECK FUNCTION |
| | DBCROL | CHECK ROLE |
| CTLCHR | | |
| | GDVINP | GET DEVICE INPUT |
| | INSCR | INPUT SCREEN |
| | MAKUSR | MAKE USER |
| | MONITR/GE | GET PHYSICAL DEVICE |
| | MONITR/MA | MAIN MODULE FOR MONITOR/UIS/FP PROCESS |
| | OISCR/ADD | ADD COMMAND TO BUFFER |
| | OISCR/CMP | COMPUTE ALL CALCULATED FIELDS |
| | OISCR/CNG | CHECK FOR AND PROCESS CHANGE MESSAGE REQUESTS |
| | OISCR/DSP | DISPLAY SCREEN |
| | OISCR/EVT | EMPTY VTI BUFFER |
| | OISCR/FVT | FILL VTI BUFFER |
| | OISCR/GAT | GET ATTRIBUTE INFO |
| | OISCR/PRO | PROCESS FIELD |
| | OISCR/PRO | PROCESS WINDOW |
| | OISCR/RST | RESET INPUT FLAGS |
| | OISCR/RST | RESET TEMPORAY ATTRIBUTES |
| | OISCR/SET | SET WINDOW |
| | ONWISC | OUTPUT (NO WAIT) / INPUT SCREEN |
| | OUTSCR | OUTPUT SCREEN |
| | RMVFPD | REMOVE FORM PROCESSOR DATA STRUCTURE |
| | UIS | USR INTERFACE SERVICES |
| | UIS/FLWIN | FILL WINDOW INFORMATION |

FORM PROCESSOR Where-include-file-used List

```
Include  Module     Module
File     Name       Purpose
-------  ------     -------

         UIS/FLWNS  FILL WINDOW MANAGER STRUCTURE
         UIS/PRCIN  PRCESS INPUT
         UIS/PRCWN  PRCESS WINDOW
         UIS/STRTA  START APPLICATION
         UIS/STRTP  START PHYSICAL DEVICE



CTYPE
         CMPFLD     COMPUTE FIELD
         CMPFLD/EV  EVALUATE FIELD EXPRESSION
         INSCR      INPUT SCREEN
         OISCR/ADD  ADD COMMAND TO BUFFER
         OISCR/CMP  COMPUTE ALL CALCULATED FIELDS
         OISCR/CNG  CHECK FOR AND PROCESS CHANGE MESSAGE
                    REQUESTS
         OISCR/DSP  DISPLAY SCREEN
         OISCR/EVT  EMPTY VTI BUFFER
         OISCR/FVT  FILL VTI BUFFER
         OISCR/GAT  GET ATTRIBUTE INFO
         OISCR/PRO  PROCESS FIELD
         OISCR/PRO  PROCESS WINDOW
         OISCR/RST  RESET INPUT FLAGS
         OISCR/RST  RESET TEMPORAY ATTRIBUTES
         OISCR/SET  SET WINDOW
         ONWISC     OUTPUT (NO WAIT) / INPUT SCREEN
         OPNFRM     OPEN FORM
         OPNFRM/BD  BUILD DEFAULT BUFFER
         OPNFRM/BF  BUILD FIELD DEFAULT BUFFER
         OPNFRM/BR  BUILD RELATIVE POSITION NODE
         OPNFRM/BT  BUILD TEXT BUFFER
         OPNFRM/PA  PROCESS ARRAY
         OPNFRM/PD  PROCESS FIELD RECORD
         OPNFRM/PF  PROCESS FORM RECORD
         OPNFRM/PF  PROCESS FORM
         OPNFRM/PI  PROCESS ITEM
         OPNFRM/PT  PROCESS TEXT RECORD
         OPNFRM/PW  PROCESS WINDOW
         OUTSCR     OUTPUT SCREEN
```

FORM PROCESSOR Where-include-file-used List

```
Include   Module      Module
File      Name        Purpose
-------   ------      -------

          PDATA       PUT FORM DATA
          PDATA/PUT   PUT BUFFER
          PMSGLS      PUT MESSAGE LINE STRING
          PTHPTR      GET PATH POINTER
          PTHPTR/AR   PROCESS ARRAY
          PTHPTR/FI   MATCH FIELD
          PTHPTR/FO   PROCESS FORM
          PTHPTR/FO   HAS ANYTHING BEEN FOUND?
          PTHPTR/IT   PROCESS ITEM
          PTHPTR/WI   PROCESS WINDOW
          RSVEXP      RESOLVE EXPRESSIONS
          RSVEXP/BL   BUILD EXPRESSION TREE



CURSORI
          DBCFNC      CHECK FUNCTION
          DBCROL      CHECK ROLE



DBASEI
          MONITR/GE   GET PHYSICAL DEVICE
          MONITR/MA   MAIN MODULE FOR MONITOR/UIS/FP PROCESS
          UIS         USR INTERFACE SERVICES
          UIS/FLWIN   FILL WINDOW INFORMATION
          UIS/FLWNS   FILL WINDOW MANAGER STRUCTURE
          UIS/PRCIN   PRCESS INPUT
          UIS/PRCWN   PRCESS WINDOW
          UIS/STRTA   START APPLICATION
          UIS/STRTP   START PHYSICAL DEVICE



FFFV2
          OPNFRM      OPEN FORM
          OPNFRM/BD   BUILD DEFAULT BUFFER
```

FORM PROCESSOR Where-include-file-used List

| Include File | Module Name | Module Purpose |
| --- | --- | --- |
| | OPNFRM/BF | BUILD FIELD DEFAULT BUFFER |
| | OPNFRM/BR | BUILD RELATIVE POSITION NODE |
| | OPNFRM/BT | BUILD TEXT BUFFER |
| | OPNFRM/PA | PROCESS ARRAY |
| | OPNFRM/PD | PROCESS FIELD RECORD |
| | OPNFRM/PF | PROCESS FORM RECORD |
| | OPNFRM/PF | PROCESS FORM |
| | OPNFRM/PI | PROCESS ITEM |
| | OPNFRM/PT | PROCESS TEXT RECORD |
| | OPNFRM/PW | PROCESS WINDOW |

FPCODE
| | | |
| --- | --- | --- |
| | ADDELM | ADD ELEMENT |
| | ADDFRM | ADD FORM TO WINDOW |
| | CALLFP | CALL FP ROUTINES |
| | CHGLDV | CHANGE LOGICAL DEVICE |
| | CLSFRM | CLOSE FORM |
| | CLSLDV | CLOSE LOGICAL DEVICE |
| | CMPFLD | COMPUTE FIELD |
| | CMPFLD/EV | EVALUATE FIELD EXPRESSION |
| | COPFLD | COPY FIELD |
| | COPFLD/CP | INTERNAL COPY FIELD |
| | COPFRM | COPY FORM |
| | DBCFNC | CHECK FUNCTION |
| | DBCROL | CHECK ROLE |
| | DELFLD | DELETE FIELD |
| | DELFLD/DE | DELETE EXPRESSION |
| | FNDMSG | FIND MESSAGE |
| | FNDMSG/CO | CODE SEARCH |
| | FNDMSG/OU | OPEN USER MESSAGE FILE |
| | GATDEF | GET ATTRIBUTE DEFINITION |
| | GDATA | GET DATA |
| | GDATA/GET | GET BUFFER |
| | GDATLN | GET DATA LENGTH |
| | GDATLN/GB | GET BUFFER LENGTH |
| | GDVINP | GET DEVICE INPUT |
| | GETATT | GET ATTRIBUTE |

FORM PROCESSOR Where-include-file-used List

| Include File | Module Name | Module Purpose |
| --- | --- | --- |
| | GETBAK | GET BACKGROUND ATTRIBUTE |
| | GETCUR | GET CURSOR POSITION |
| | GETCUR/CO | CONCATENATE STRING TO CURRENT NAME |
| | GPAGE | GET PAGE |
| | GWINDO | GET WINDOW |
| | INITVT | INITIAL VIRTUAL TERMINAL INTERFACE |
| | INQLDV | INQUIRE LOGICAL DEVICE |
| | INSCR | INPUT SCREEN |
| | MAKAP | MAKE APLICATION STRUTURE |
| | MAKFLD | MAKE FIELD |
| | MAKPD | MAKE PHYSICAL DEVICE STRUCTURE |
| | MAKUSR | MAKE USER |
| | MONITR/GE | GET PHYSICAL DEVICE |
| | MONITR/MA | MAIN MODULE FOR MONITOR/UIS/FP PROCESS |
| | OISCR/ADD | ADD COMMAND TO BUFFER |
| | OISCR/CMP | COMPUTE ALL CALCULATED FIELDS |
| | OISCR/CNG | CHECK FOR AND PROCESS CHANGE MESSAGE REQUESTS |
| | OISCR/DSP | DISPLAY SCREEN |
| | OISCR/EVT | EMPTY VTI BUFFER |
| | OISCR/FVT | FILL VTI BUFFER |
| | OISCR/GAT | GET ATTRIBUTE INFO |
| | OISCR/PRO | PROCESS FIELD |
| | OISCR/PRO | PROCESS WINDOW |
| | OISCR/RST | RESET INPUT FLAGS |
| | OISCR/RST | RESET TEMPORAY ATTRIBUTES |
| | OISCR/SET | SET WINDOW |
| | ONWISC | OUTPUT (NO WAIT) / INPUT SCREEN |
| | OPNFRM | OPEN FORM |
| | OPNFRM/BD | BUILD DEFAULT BUFFER |
| | OPNFRM/BF | BUILD FIELD DEFAULT BUFFER |
| | OPNFRM/BR | BUILD RELATIVE POSITION NODE |
| | OPNFRM/BT | BUILD TEXT BUFFER |
| | OPNFRM/PA | PROCESS ARRAY |
| | OPNFRM/PD | PROCESS FIELD RECORD |
| | OPNFRM/PF | PROCESS FORM RECORD |
| | OPNFRM/PF | PROCESS FORM |
| | OPNFRM/PI | PROCESS ITEM |
| | OPNFRM/PT | PROCESS TEXT RECORD |
| | OPNFRM/PW | PROCESS WINDOW |

FORM PROCESSOR Where-include-file-used List

| Include File | Module Name | Module Purpose |
| --- | --- | --- |
| | OPNLDV | OPEN LOGICAL DEVICE |
| | OUTSCR | OUTPUT SCREEN |
| | PARFQN | PARSE FULLY QUALIFIED NAME |
| | PDATA | PUT FORM DATA |
| | PDATA/PUT | PUT BUFFER |
| | PDVOTP | PUT DEVICE OUTPUT |
| | PMSGLS | PUT MESSAGE LINE STRING |
| | PTHPTR | GET PATH POINTER |
| | PTHPTR/AR | PROCESS ARRAY |
| | PTHPTR/FI | MATCH FIELD |
| | PTHPTR/FO | PROCESS FORM |
| | PTHPTR/FO | HAS ANYTHING BEEN FOUND? |
| | PTHPTR/IT | PROCESS ITEM |
| | PTHPTR/WI | PROCESS WINDOW |
| | PUTATT | PUT ATTRIBUTES |
| | PUTATT/AA | ATTRIBUTE ABSOLUTE SET ATTRIBUTE |
| | PUTBAK | PUT BACKGROUND ATTRIBUTES |
| | PUTCUR | PUT CURSOR |
| | PUTLOC | PUT LOCATION |
| | RMVPAG | REMOVE PAGE |
| | RMVPD | REMOVE PHYSICAL DEVICE DATA STRUCTRUE |
| | RPLFRM | REPLACE FORM |
| | RSVEXP | RESOLVE EXPRESSIONS |
| | RSVEXP/BL | BUILD EXPRESSION TREE |
| | SFPDAP | SET FORM PROCESSOR DATA STRUCTURE FOR APLICATION |
| | STUPFP | SET UP FORM PROCESSOR DATA STRUCTURES |
| | SYSMSG | SYSTEM MESSAGE ROUTINE |
| | TERMVT | TERMINATE VIRTUAL TERMINAL INTERFACE |
| | TRMDRV | TERMINATE DEVICE DRIVER |
| | TRMUSR | TERMINATE USER |
| | UIS | USR INTERFACE SERVICES |
| | UIS/FLWIN | FILL WINDOW INFORMATION |
| | UIS/FLWNS | FILL WINDOW MANAGER STRUCTURE |
| | UIS/PRCIN | PRCESS INPUT |
| | UIS/PRCWN | PRCESS WINDOW |
| | UIS/STRTA | START APPLICATION |
| | UIS/STRTP | START PHYSICAL DEVICE |

FORM PROCESSOR Where-include-file-used List

| Include File | Module Name | Module Purpose |
| --- | --- | --- |

FPD

| | ACRPOS | ABSOLUTIZE CURSOR POSITION OF FIELD |
| --- | --- | --- |
| | ADDELM | ADD ELEMENT |
| | ADDFRM | ADD FORM TO WINDOW |
| | ADJSTR | ADJUST FORM PROCESSOR STRUSCTURE |
| | CALLFP | CALL FP ROUTINES |
| | CANITM | CANONICALIZE ITEM |
| | CHGLDV | CHANGE LOGICAL DEVICE |
| | CHGPRC | CHANGE PRECEDENCE OF WINDOW OR LOGICAL DEVICE |
| | CLSFRM | CLOSE FORM |
| | CLSLDV | CLOSE LOGICAL DEVICE |
| | CMPFLD | COMPUTE FIELD |
| | CMPFLD/EV | EVALUATE FIELD EXPRESSION |
| | COPFLD | COPY FIELD |
| | COPFLD/CP | INTERNAL COPY FIELD |
| | COPFRM | COPY FORM |
| | CURPOS | GET CURSOR POSITION |
| | CURPOS/FN | FIND CURSOR POSITION |
| | DELFLD | DELETE FIELD |
| | DELFLD/DE | DELETE EXPRESSION |
| | FNDFLD | FIND FIELD |
| | FNDMSG | FIND MESSAGE |
| | FNDMSG/CO | CODF SEARCH |
| | FNDMSG/OU | OPEN USER MESSAGE FILE |
| | FNFPWN | FIND FORM PROCESSOR WINDOW |
| | FUISWN | FIND UIS WINDOW |
| | GARPOS | GET ARRAY OFFSET POSITION OF FIELD |
| | GATDEF | GET ATTRIBUTE DEFINITION |
| | GDATA | GET DATA |
| | GDATA/GET | GET BUFFER |
| | GDATLN | GET DATA LENGTH |
| | GDATLN/GB | GET BUFFER LENGTH |
| | GDVINP | GET DEVICE INPUT |
| | GETATT | GET ATTRIBUTE |
| | GETBAK | GET BACKGROUND ATTRIBUTE |

FORM PROCESSOR Where-include-file-used List

| Include File | Module Name | Module Purpose |
| --- | --- | --- |
| | GETCUR | GET CURSOR POSITION |
| | GETCUR/CO | CONCATENATE STRING TO CURRENT NAME |
| | GOFPTR | GET OPEN FROM POINTER |
| | GPAGE | GET PAGE |
| | GWINDO | GET WINDOW |
| | INITVT | INITIAL VIRTUAL TERMINAL INTERFACE |
| | INQLDV | INQUIRE LOGICAL DEVICE |
| | INSCR | INPUT SCREEN |
| | MABSAT | MAP ABSOLUTE ATTRIBUTE |
| | MAKAP | MAKE APLICATION STRUTURE |
| | MAKFLD | MAKE FIELD |
| | MAKFPD | MAKE FORM PROCESSOR DATA (LOGICAL DEVICE STRUCTURE) |
| | MAKPD | MAKE PHYSICAL DEVICE STRUCTURE |
| | MAKUSR | MAKE USER |
| | MONITR/GE | GET PHYSICAL DEVICE |
| | MONITR/MA | MAIN MODULE FOR MONITOR/UIS/FP PROCESS |
| | OISCR/ADD | ADD COMMAND TO BUFFER |
| | OISCR/CMP | COMPUTE ALL CALCULATED FIELDS |
| | OISCR/CNG | CHECK FOR AND PROCESS CHANGE MESSAGE REQUESTS |
| | OISCR/DSP | DISPLAY SCREEN |
| | OISCR/EVT | EMPTY VTI BUFFER |
| | OISCR/FVT | FILL VTI BUFFER |
| | OISCR/GAT | GET ATTRIBUTE INFO |
| | OISCR/PRO | PROCESS FIELD |
| | OISCR/PRO | PROCESS WINDOW |
| | OISCR/RST | RESET INPUT FLAGS |
| | OISCR/RST | RESET TEMPORAY ATTRIBUTES |
| | OISCR/SET | SET WINDOW |
| | ONWISC | OUTPUT (NO WAIT) / INPUT SCREEN |
| | OPNFRM | OPEN FORM |
| | OPNFRM/BD | BUILD DEFAULT BUFFER |
| | OPNFRM/BF | BUILD FIELD DEFAULT BUFFER |
| | OPNFRM/BR | BUILD RELATIVE POSITION NODE |
| | OPNFRM/BT | BUILD TEXT BUFFER |
| | OPNFRM/PA | PROCESS ARRAY |
| | OPNFRM/PD | PROCESS FIELD RECORD |
| | OPNFRM/PF | PROCESS FORM RECORD |
| | OPNFRM/PF | PROCESS FORM |

FORM PROCESSOR Where include-file-used List

| Include File | Module Name | Module Purpose |
|---|---|---|
| | OPNFRM PI | PROCESS ITEM |
| | OPNFRM PT | PROCESS TEXT RECORD |
| | OPNFRM PW | PROCESS WINDOW |
| | OPNLDV | OPEN LOGICAL DEVICE |
| | OUTSCR | OUTPUT SCREEN |
| | PARFQN | PARSE FULLY QUALIFIED NAME |
| | PDATA | PUT FORM DATA |
| | PDATA PUT | PUT BUFFER |
| | PDVOTP | PUT DEVICE OUTPUT |
| | PMSGLC | PUT MESSAGE LINE CODE |
| | PMSGLS | PUT MESSAGE LINE STRING |
| | POSCUR | POSITION CURSOR |
| | POSCUR FN | FIND FIRST ITEM OF FIELD |
| | PRNAP | PRINT APLICATION |
| | PRNDSP | PRINT DISPLAY LIST |
| | PRNFLD | PRINT FIELD |
| | PRNOPN | PRINT OPEN LIST |
| | PRNPD | PRINT PHYSICAL DEVICE |
| | PRNUID | PRINT UID |
| | PRNUSR | PRINT USER |
| | PTHPTR | GET PATH POINTER |
| | PTHPTR/AR | PROCESS ARRAY |
| | PTHPTR/FI | MATCH FIELD |
| | PTHPTR/FO | PROCESS FORM |
| | PTHPTR FO | HAS ANYTHING BEEN FOUND? |
| | PTHPTR IT | PROCESS ITEM |
| | PTHPTR/WI | PROCESS WINDOW |
| | PUTATT | PUT ATTRIBUTES |
| | PUTATT AA | ATTRIBUTE ABSOLUTE SET ATTRIBUTE |
| | PUTBAK | PUT BACKGROUND ATTRIBUTES |
| | PUTCUR | PUT CURSOR |
| | PUTLOC | PUT LOCATION |
| | RMVAP | REMOVE APPLICATION |
| | RMVFPD | REMOVE FORM PROCESSOR DATA STRUCTURE |
| | RMVPAG | REMOVE PAGE |
| | RMVPD | REMOVE PHYSICAL DEVICE DATA STRUCTRUE |
| | RPLFRM | REPLACE FORM |
| | RSVATT | RESOLVE ATTRIBUTE |
| | RSVATT/RS | RESOLVE REST |
| | RSVEXP | RESOLVE EXPRESSIONS |

FORM PROCESSOR Where-include-file-used List

| Include File | Module Name | Module Purpose |
|---|---|---|
| | RSVEXP/BL | BUILD EXPRESSION TREE |
| | SFPDAP | SET FORM PROCESSOR DATA STRUCTURE FOR APLICATION |
| | STUPFP | SET UP FORM PROCESSOR DATA STRUCTURES |
| | SYSMSG | SYSTEM MESSAGE ROUTINE |
| | TERMVT | TERMINATE VIRTUAL TERMINAL INTERFACE |
| | TRMDRV | TERMINATE DEVICE DRIVER |
| | TRMUSR | TERMINATE USER |
| | UIS | USR INTERFACE SERVICES |
| | UIS/FLWIN | FILL WINDOW INFORMATION |
| | UIS/FLWNS | FILL WINDOW MANAGER STRUCTURE |
| | UIS/PRCIN | PRCESS INPUT |
| | UIS/PRCWN | PRCESS WINDOW |
| | UIS/STRTA | START APPLICATION |
| | UIS/STRTP | START PHYSICAL DEVICE |
| | ULKFPD | UNLINKK FPD |

FPDINI

| | MONITR/GE | GET PHYSICAL DEVICE |
|---|---|---|
| | MONITR/MA | MAIN MODULE FOR MONITOR/UIS/FP PROCESS |

FPEMSG

| | FNDMSG | FIND MESSAGE |
|---|---|---|
| | FNDMSG/CO | CODE SEARCH |
| | FNDMSG/OU | OPEN USER MESSAGE FILE |

FPPARM

| | GDATA | GET DATA |
|---|---|---|
| | GDATA/GET | GET BUFFER |
| | GDATLN | GET DATA LENGTH |
| | GDATLN/GB | GET BUFFER LENGTH |

FORM PROCESSOR Where-include-file-used List

| Include File | Module Name | Module Purpose |
|---|---|---|
| | GETATT | GET ATTRIBUTE |
| | GETBAK | GET BACKGROUND ATTRIBUTE |
| | GETCUR | GET CURSOR POSITION |
| | GETCUR/CO | CONCATENATE STRING TO CURRENT NAME |
| | GPAGE | GET PAGE |
| | GWINDO | GET WINDOW |
| | INSCR | INPUT SCREEN |
| | MONITR/GE | GET PHYSICAL DEVICE |
| | MONITR/MA | MAIN MODULE FOR MONITOR/UIS/FP PROCESS |
| | OISCR/ADD | ADD COMMAND TO BUFFER |
| | OISCR/CMP | COMPUTE ALL CALCULATED FIELDS |
| | OISCR/CNG | CHECK FOR AND PROCESS CHANGE MESSAGE REQUESTS |
| | OISCR/DSP | DISPLAY SCREEN |
| | OISCR/EVT | EMPTY VTI BUFFER |
| | OISCR/FVT | FILL VTI BUFFER |
| | OISCR/GAT | GET ATTRIBUTE INFO |
| | OISCR/PRO | PROCESS FIELD |
| | OISCR/PRO | PROCESS WINDOW |
| | OISCR/RST | RESET INPUT FLAGS |
| | OISCR/RST | RESET TEMPORAY ATTRIBUTES |
| | OISCR/SET | SET WINDOW |
| | ONWISC | OUTPUT (NO WAIT) / INPUT SCREEN |
| | OUTSCR | OUTPUT SCREEN |
| | PUTATT | PUT ATTRIBUTES |
| | PUTATT/AA | ATTRIBUTE ABSOLUTE SET ATTRIBUTE |
| | PUTBAK | PUT BACKGROUND ATTRIBUTES |
| | RMVPAG | REMOVE PAGE |
| | UIS | USR INTERFACE SERVICES |
| | UIS/FLWIN | FILL WINDOW INFORMATION |
| | UIS/FLWNS | FILL WINDOW MANAGER STRUCTURE |
| | UIS/PRCIN | PRCESS INPUT |
| | UIS/PRCWN | PRCESS WINDOW |
| | UIS/STRTA | START APPLICATION |
| | UIS/STRTP | START PHYSICAL DEVICE |

FUNCTS

FORM PROCESSOR Where-include-file-used List

| Include File | Module Name | Module Purpose |
| ------- | ------ | ------- |
| | GDVINP | GET DEVICE INPUT |
| | INSCR | INPUT SCREEN |
| | MAKUSR | MAKE USER |
| | MONITR/GE | GET PHYSICAL DEVICE |
| | MONITR/MA | MAIN MODULE FOR MONITOR/UIS/FP PROCESS |
| | OISCR/ADD | ADD COMMAND TO BUFFER |
| | OISCR/CMP | COMPUTE ALL CALCULATED FIELDS |
| | OISCR/CNG | CHECK FOR AND PROCESS CHANGE MESSAGE REQUESTS |
| | OISCR/DSP | DISPLAY SCREEN |
| | OISCR/EVT | EMPTY VTI BUFFER |
| | OISCR/FVT | FILL VTI BUFFER |
| | OISCR/GAT | GET ATTRIBUTE INFO |
| | OISCR/PRO | PROCESS FIELD |
| | OISCR/PRO | PROCESS WINDOW |
| | OISCR/RST | RESET INPUT FLAGS |
| | OISCR/RST | RESET TEMPORAY ATTRIBUTES |
| | OISCR/SET | SET WINDOW |
| | ONWISC | OUTPUT (NO WAIT) / INPUT SCREEN |
| | OUTSCR | OUTPUT SCREEN |
| NTM | | |
| | CALLFP | CALL FP ROUTINES |
| | MONITR/GE | GET PHYSICAL DEVICE |
| | MONITR/MA | MAIN MODULE FOR MONITOR/UIS/FP PROCESS |
| | PDVOTP | PUT DEVICE OUTPUT |
| | TRMDRV | TERMINATE DEVICE DRIVER |
| | TRMUSR | TERMINATE USER |
| | UIS | USR INTERFACE SERVICES |
| | UIS/FLWIN | FILL WINDOW INFORMATION |
| | UIS/FLWNS | FILL WINDOW MANAGER STRUCTURE |
| | UIS/PRCIN | PRCESS INPUT |
| | UIS/PRCWN | PRCESS WINDOW |
| | UIS/STRTA | START APPLICATION |
| | UIS/STRTP | START PHYSICAL DEVICE |

FORM PROCESSOR Where-include-file-used List

```
Include  Module    Module
File     Name      Purpose
-------  ------    -------
```

ORACLE
```
         DBCFNC    CHECK FUNCTION
         DBCROL    CHECK ROLE
```

ORCODE
```
         DBCFNC    CHECK FUNCTION
         DBCROL    CHECK ROLE
```

STDIO
```
         FNDMSG    FIND MESSAGE
         FNDMSG/CO CODE SEARCH
         FNDMSG/OU OPEN USER MESSAGE FILE
         GDVINP    GET DEVICE INPUT
         INSCR     INPUT SCREEN
         MONITR/GE GET PHYSICAL DEVICE
         MONITR/MA MAIN MODULE FOR MONITOR/UIS/FP PROCESS
         OISCR/ADD ADD COMMAND TO BUFFER
         OISCR/CMP COMPUTE ALL CALCULATED FIELDS
         OISCR/CNG CHECK FOR AND PROCESS CHANGE MESSAGE
                   REQUESTS
         OISCR/DSP DISPLAY SCREEN
         OISCR/EVT EMPTY VTI BUFFER
         OISCR/FVT FILL VTI BUFFER
         OISCR/GAT GET ATTRIBUTE INFO
         OISCR/PRO PROCESS FIELD
         OISCR/PRO PROCESS WINDOW
         OISCR/RST RESET INPUT FLAGS
         OISCR/RST RESET TEMPORAY ATTRIBUTES
         OISCR/SET SET WINDOW
         ONWISC    OUTPUT (NO WAIT) / INPUT SCREEN
```

FORM PROCESSOR Where-include-file-used List

| Include File | Module Name | Module Purpose |
| --- | --- | --- |
| | OPNFRM | OPEN FORM |
| | OPNFRM/BD | BUILD DEFAULT BUFFER |
| | OPNFRM/BF | BUILD FIELD DEFAULT BUFFER |
| | OPNFRM/BR | BUILD RELATIVE POSITION NODE |
| | OPNFRM/BT | BUILD TEXT BUFFER |
| | OPNFRM/PA | PROCESS ARRAY |
| | OPNFRM/PD | PROCESS FIELD RECORD |
| | OPNFRM/PF | PROCESS FORM RECORD |
| | OPNFRM/PF | PROCESS FORM |
| | OPNFRM/PI | PROCESS ITEM |
| | OPNFRM/PT | PROCESS TEXT RECORD |
| | OPNFRM/PW | PROCESS WINDOW |
| | OUTSCR | OUTPUT SCREEN |
| | PRNAP | PRINT APLICATION |
| | PRNDSP | PRINT DISPLAY LIST |
| | PRNFLD | PRINT FIELD |
| | PRNOPN | PRINT OPEN LIST |
| | PRNPD | PRINT PHYSICAL DEVICE |
| | PRNUID | PRINT UID |
| | PRNUSR | PRINT USER |
| STDTYP | | |
| | ACRPOS | ABSOLUTIZE CURSOR POSITION OF FIELD |
| | ADDELM | ADD ELEMENT |
| | ADDFRM | ADD FORM TO WINDOW |
| | ADJSTR | ADJUST FORM PROCESSOR STRUSCTURE |
| | CALLFP | CALL FP ROUTINES |
| | CANITM | CANONICALIZE ITEM |
| | CHGLDV | CHANGE LOGICAL DEVICE |
| | CHGPRC | CHANGE PRECEDENCE OF WINDOW OR LOGICAL DEVICE |
| | CLSFRM | CLOSE FORM |
| | CLSLDV | CLOSE LOGICAL DEVICE |
| | CMPFLD | COMPUTE FIELD |
| | CMPFLD/EV | EVALUATE FIELD EXPRESSION |
| | COPFLD | COPY FIELD |
| | COPFLD/CP | INTERNAL COPY FIELD |

FORM PROCESSOR Where-include-file-used List

| Include File | Module Name | Module Purpose |
| --- | --- | --- |
| | COPFRM | COPY FORM |
| | CURPOS | GET CURSOR POSITION |
| | CURPOS/FN | FIND CURSOR POSITION |
| | DELFLD | DELETE FIELD |
| | DELFLD/DE | DELETE EXPRESSION |
| | ESCPY | EXTERNAL STRING COPY |
| | FNDFLD | FIND FIELD |
| | FNDMSG | FIND MESSAGE |
| | FNDMSG/CO | CODE SEARCH |
| | FNDMSG/OU | OPEN USER MESSAGE FILE |
| | FNFPWN | FIND FORM PROCESSOR WINDOW |
| | FUISWN | FIND UIS WINDOW |
| | GARPOS | GET ARRAY OFFSET POSITION OF FIELD |
| | GATDEF | GET ATTRIBUTE DEFINITION |
| | GDATA | GET DATA |
| | GDATA/GET | GET BUFFER |
| | GDATLN | GET DATA LENGTH |
| | GDATLN/GB | GET BUFFER LENGTH |
| | GDVINP | GET DEVICE INPUT |
| | GETATT | GET ATTRIBUTE |
| | GETBAK | GET BACKGROUND ATTRIBUTE |
| | GETCUR | GET CURSOR POSITION |
| | GETCUR/CO | CONCATENATE STRING TO CURRENT NAME |
| | GOFPTR | GET OPEN FROM POINTER |
| | GPAGE | GET PAGE |
| | GWINDO | GET WINDOW |
| | INITVT | INITIAL VIRTUAL TERMINAL INTERFACE |
| | INQLDV | INQUIRE LOGICAL DEVICE |
| | INSCR | INPUT SCREEN |
| | MABSAT | MAP ABSOLUTE ATTRIBUTE |
| | MAKAP | MAKE APLICATION STRUTURE |
| | MAKFLD | MAKE FIELD |
| | MAKFPD | MAKE FORM PROCESSOR DATA (LOGICAL DEVICE STRUCTURE) |
| | MAKPD | MAKE PHYSICAL DEVICE STRUCTURE |
| | MAKUSR | MAKE USER |
| | MONITR/GE | GET PHYSICAL DEVICE |
| | MONITR/MA | MAIN MODULE FOR MONITOR/UIS/FP PROCESS |
| | OISCR/ADD | ADD COMMAND TO BUFFER |
| | OISCR/CMP | COMPUTE ALL CALCULATED FIELDS |

FORM PROCESSOR Where-include-file-used List

| Include File | Module Name | Module Purpose |
| --- | --- | --- |
| | OISCR/CNG | CHECK FOR AND PROCESS CHANGE MESSAGE REQUESTS |
| | OISCR/DSP | DISPLAY SCREEN |
| | OISCR/EVT | EMPTY VTI BUFFER |
| | OISCR/FVT | FILL VTI BUFFER |
| | OISCR/GAT | GET ATTRIBUTE INFO |
| | OISCR/PRO | PROCESS FIELD |
| | OISCR/PRO | PROCESS WINDOW |
| | OISCR/RST | RESET INPUT FLAGS |
| | OISCR/RST | RESET TEMPORAY ATTRIBUTES |
| | OISCR/SET | SET WINDOW |
| | ONWISC | OUTPUT (NO WAIT) / INPUT SCREEN |
| | OPNFRM | OPEN FORM |
| | OPNFRM/BD | BUILD DEFAULT BUFFER |
| | OPNFRM/BF | BUILD FIELD DEFAULT BUFFER |
| | OPNFRM/BR | BUILD RELATIVE POSITION NODE |
| | OPNFRM/BT | BUILD TEXT BUFFER |
| | OPNFRM/PA | PROCESS ARRAY |
| | OPNFRM/PD | PROCESS FIELD RECORD |
| | OPNFRM/PF | PROCESS FORM RECORD |
| | OPNFRM/PF | PROCESS FORM |
| | OPNFRM/PI | PROCESS ITEM |
| | OPNFRM/PT | PROCESS TEXT RECORD |
| | OPNFRM/PW | PROCESS WINDOW |
| | OPNLDV | OPEN LOGICAL DEVICE |
| | OUTSCR | OUTPUT SCREEN |
| | PARFQN | PARSE FULLY QUALIFIED NAME |
| | PDATA | PUT FORM DATA |
| | PDATA/PUT | PUT BUFFER |
| | PDVOTP | PUT DEVICE OUTPUT |
| | PMSGLC | PUT MESSAGE LINE CODE |
| | PMSGLS | PUT MESSAGE LINE STRING |
| | POSCUR | POSITION CURSOR |
| | POSCUR/FN | FIND FIRST ITEM OF FIELD |
| | PRNAP | PRINT APLICATION |
| | PRNDSP | PRINT DISPLAY LIST |
| | PRNFLD | PRINT FIELD |
| | PRNOPN | PRINT OPEN LIST |
| | PRNPD | PRINT PHYSICAL DEVICE |
| | PRNUID | PRINT UIL |

FORM PROCESSOR Where-include-file-used List

| Include File | Module Name | Module Purpose |
| --- | --- | --- |
| | PRNUSR | PRINT USER |
| | PTHPTR | GET PATH POINTER |
| | PTHPTR/AR | PROCESS ARRAY |
| | PTHPTR/FI | MATCH FIELD |
| | PTHPTR/FO | PROCESS FORM |
| | PTHPTR/FO | HAS ANYTHING BEEN FOUND? |
| | PTHPTR/IT | PROCESS ITEM |
| | PTHPTR/WI | PROCESS WINDOW |
| | PUTATT | PUT ATTRIBUTES |
| | PUTATT/AA | ATTRIBUTE ABSOLUTE SET ATTRIBUTE |
| | PUTBAK | PUT BACKGROUND ATTRIBUTES |
| | PUTCUR | PUT CURSOR |
| | PUTLOC | PUT LOCATION |
| | RMVAP | REMOVE APPLICATION |
| | RMVFPD | REMOVE FORM PROCESSOR DATA STRUCTURE |
| | RMVPAG | REMOVE PAGE |
| | RMVPD | REMOVE PHYSICAL DEVICE DATA STRUCTRUE |
| | RPLFRM | REPLACE FORM |
| | RSVATT | RESOLVE ATTRIBUTE |
| | RSVATT/RS | RESOLVE REST |
| | RSVEXP | RESOLVE EXPRESSIONS |
| | RSVEXP/BL | BUILD EXPRESSION TREE |
| | SFPDAP | SET FORM PROCESSOR DATA STRUCTURE FOR APLICATION |
| | STUPFP | SET UP FORM PROCESSOR DATA STRUCTURES |
| | SYSMSG | SYSTEM MESSAGE ROUTINE |
| | TERMVT | TERMINATE VIRTUAL TERMINAL INTERFACE |
| | TRMDRV | TERMINATE DEVICE DRIVER |
| | TRMUSR | TERMINATE USER |
| | UIS | USR INTERFACE SERVICES |
| | UIS/FLWIN | FILL WINDOW INFORMATION |
| | UIS/FLWNS | FILL WINDOW MANAGER STRUCTURE |
| | UIS/PRCIN | PRCESS INPUT |
| | UIS/PRCWN | PRCESS WINDOW |
| | UIS/STRTA | START APPLICATION |
| | UIS/STRTP | START PHYSICAL DEVICE |
| | ULKFPD | UNLINKK FPD |

FORM PROCESSOR Where-include-file-used List

| Include File | Module Name | Module Purpose |
| --- | --- | --- |

TIME

| | CMPFLD | COMPUTE FIELD |
| --- | --- | --- |
| | CMPFLD/EV | EVALUATE FIELD EXPRESSION |
| | INSCR | INPUT SCREEN |
| | OISCR/ADD | ADD COMMAND TO BUFFER |
| | OISCR/CMP | COMPUTE ALL CALCULATED FIELDS |
| | OISCR/CNG | CHECK FOR AND PROCESS CHANGE MESSAGE REQUESTS |
| | OISCR/DSP | DISPLAY SCREEN |
| | OISCR/EVT | EMPTY VTI BUFFER |
| | OISCR/FVT | FILL VTI BUFFER |
| | OISCR/GAT | GET ATTRIBUTE INFO |
| | OISCR/PRO | PROCESS FIELD |
| | OISCR/PRO | PROCESS WINDOW |
| | OISCR/RST | RESET INPUT FLAGS |
| | OISCR/RST | RESET TEMPORAY ATTRIBUTES |
| | OISCR/SET | SET WINDOW |
| | ONWISC | OUTPUT (NO WAIT) / INPUT SCREEN |
| | OUTSCR | OUTPUT SCREEN |

UISFM

| | UIS | USR INTERFACE SERVICES |
| --- | --- | --- |
| | UIS/FLWIN | FILL WINDOW INFORMATION |
| | UIS/FLWNS | FILL WINDOW MANAGER STRUCTURE |
| | UIS/PRCIN | PRCESS INPUT |
| | UIS/PRCWN | PRCESS WINDOW |
| | UIS/STRTA | START APPLICATION |
| | UIS/STRTP | START PHYSICAL DEVICE |

VTICOM

FORM PROCESSOR Where-include-file-used List

| Include File | Module Name | Module Purpose |
| --- | --- | --- |
| | INSCR | INPUT SCREEN |
| | OISCR/ADD | ADD COMMAND TO BUFFER |
| | OISCR/CMP | COMPUTE ALL CALCULATED FIELDS |
| | OISCR/CNG | CHECK FOR AND PROCESS CHANGE MESSAGE REQUESTS |
| | OISCR/DSP | DISPLAY SCREEN |
| | OISCR/EVT | EMPTY VTI BUFFER |
| | OISCR/FVT | FILL VTI BUFFER |
| | OISCR/GAT | GET ATTRIBUTE INFO |
| | OISCR/PRO | PROCESS FIELD |
| | OISCR/PRO | PROCESS WINDOW |
| | OISCR/RST | RESET INPUT FLAGS |
| | OISCR/RST | RESET TEMPORAY ATTRIBUTES |
| | OISCR/SET | SET WINDOW |
| | ONWISC | OUTPUT (NO WAIT) / INPUT SCREEN |
| | OUTSCR | OUTPUT SCREEN |
| | PDVOTP | PUT DEVICE OUTPUT |

### 3.10.6 <u>Where External Routine Used List</u>

The following lists each external function or routine listed in 3.10.3 and all the documented modules which call it. The purpose of each module is listed as well.

FORM PROCESSOR Where-external-routine-used List

| System<br>Module | Module<br>Name | Module<br>Purpose |
| --- | --- | --- |

ABORT

    OPNFRM/BRPBUILD RELATIVE POSITION NODE

ABS

    ADDELM    ADD ELEMENT
    ADJSTR    ADJUST FORM PROCESSOR STRUSCTURE
    COPFLD/CPYINTERNAL COPY FIELD
    CURPOS/FNDFIND CURSOR POSITION
    OISCR/PROCPROCESS FIELD
    OISCR/PROCPROCESS WINDOW
    OPNFRM/PARPROCESS ARRAY

ATOI

    MAKAP    MAKE APLICATION STRUTURE
    RMVAP    REMOVE APPLICATION
    SYSMSG    SYSTEM MESSAGE ROUTINE

BLDCMD

    GDVINP    GET DEVICE INPUT
    MAKUSR    MAKE USER
    MONITR/MAIMAIN MODULE FOR MONITOR/UIS/FP PROCESS
    OISCR/EVTBEMPTY VTI BUFFER

BLEN

    CANITM    CANONICALIZE ITEM
    CMPFLD    COMPUTE FIELD
    CMPFLD/EVAEVALUATE FIELD EXPRESSION
    COPFLD/CPYINTERNAL COPY FIELD
    GDATA/GETBGET BUFFER
    GDATLN/GBUGET BUFFER LENGTH
    OISCR/EVTBEMPTY VTI BUFFER
    OISCR/PROCPROCESS FIELD

FORM PROCESSOR Where-external-routine-used List

| System Module | Module Name | Module Purpose |
| --- | --- | --- |

OISCR/RSTIRESET INPUT FLAGS
OPNFRM/BFLBUILD FIELD DEFAULT BUFFER
PDATA/PUTBPUT BUFFER


CALLOC

| | | |
| --- | --- | --- |
| | MAKAP | MAKE APLICATION STRUTURE |
| | MAKFPD | MAKE FORM PROCESSOR DATA (LOGICAL DEVICE STRUCTURE) |
| | MAKPD | MAKE PHYSICAL DEVICE STRUCTURE |
| | MAKUSR | MAKE USER |


CBIT

COPFLD/CPYINTERNAL COPY FIELD
DELFLD     DELETE FIELD
RMVAP      REMOVE APPLICATION


CBPTR

CANITM     CANONICALIZE ITEM
CMPFLD     COMPUTE FIELD
CMPFLD/EVAEVALUATE FIELD EXPRESSION
COPFLD/CPYINTERNAL COPY FIELD
GDATA/GETBGET BUFFER
OISCR/EVTBEMPTY VTI BUFFER
OISCR/PROCPROCESS FIELD
OISCR/RSTIRESET INPUT FLAGS
PDATA/PUTBPUT BUFFER


CFREE

| | | |
| --- | --- | --- |
| | MAKAP | MAKE APLICATION STRUTURE |
| | MAKUSR | MAKE USER |
| | RMVAP | REMOVE APPLICATION |
| | RMVFPD | REMOVE FORM PROCESSOR DATA STRUCTURE |

FORM PROCESSOR Where-external-routine-used List

| System Module | Module Name | Module Purpose |
| ------ | ------ | ------- |
| | RMVPD | REMOVE PHYSICAL DEVICE DATA STRUCTRUE |
| | TRMUSR | TERMINATE USER |

DBCLSE

MONITR/MAIMAIN MODULE FOR MONITOR/UIS/FP PROCESS

DBCOM

UIS/STRTAPSTART APPLICATION

DBCUPR

UIS        USR INTERFACE SERVICES

DBGAPD

UIS/STRTAPSTART APPLICATION

DBOPEN

MONITR/MAIMAIN MODULE FOR MONITOR/UIS/FP PROCESS

DOATTR

PRNFLD     PRINT FIELD

DOITEM

PRNFLD     PRINT FIELD

FORM PROCESSOR Where-external-routine-used List

| System<br>Module | Module<br>Name | Module<br>Purpose |
| --- | --- | --- |

DOWIND

　　　　PRNFLD　　PRINT FIELD


DSPMSG

　　　　INSCR　　　INPUT SCREEN
　　　　OISCR/FVTBFILL VTI BUFFER
　　　　RMVAP　　　REMOVE APPLICATION


ERRPRO

　　　　SYSMSG　　SYSTEM MESSAGE ROUTINE


FCLOSE

　　　　GDVINP　　GET DEVICE INPUT
　　　　MONITR/MAIMAIN MODULE FOR MONITOR/UIS/FP PROCESS
　　　　OPNFRM　　OPEN FORM
　　　　PDVOTP　　PUT DEVICE OUTPUT
　　　　RMVPD　　　REMOVE PHYSICAL DEVICE DATA STRUCTRUE
　　　　UIS/STRTPDSTART PHYSICAL DEVICE


FEOF

　　　　MONITR/MAIMAIN MODULE FOR MONITOR/UIS/FP PROCESS
　　　　OPNFRM/BDBBUILD DEFAULT BUFFER


FERROR

　　　　MONITR/MAIMAIN MODULE FOR MONITOR/UIS/FP PROCESS
　　　　OPNFRM/BDBBUILD DEFAULT BUFFER
　　　　OPNFRM/BRPBUILD RELATIVE POSITION NODE
　　　　OPNFRM/BTBBUILD TEXT BUFFER

FORM PROCESSOR Where-external-routine-used List

| System Module | Module Name | Module Purpose |
| --- | --- | --- |

FFBCA

COPFLD/CPYINTERNAL COPY FIELD
STUPFP    SET UP FORM PROCESSOR DATA STRUCTURES
UIS/STRTAPSTART APPLICATION
UIS/STRTPDSTART PHYSICAL DEVICE

FOPEN

FNDMSG/OUMOPEN USER MESSAGE FILE
MONITR/MAIMAIN MODULE FOR MONITOR/UIS/FP PROCESS
OPNFRM    OPEN FORM
UIS/STRTPDSTART PHYSICAL DEVICE

FPRINTF

MONITR/MAIMAIN MODULE FOR MONITOR/UIS/FP PROCESS

FREAD

FNDMSG/CODCODE SEARCH
MONITR/MAIMAIN MODULE FOR MONITOR/UIS/FP PROCESS
OPNFRM/BRPBUILD RELATIVE POSITION NODE
OPNFRM/PDRPROCESS FIELD RECORD
OPNFRM/PFRPROCESS FORM RECORD
OPNFRM/PTRPROCESS TEXT RECORD

FREE

CMPFLD    COMPUTE FIELD
CMPFLD/EVAEVALUATE FIELD EXPRESSION
COPFLD/CPYINTERNAL COPY FIELD
DELFLD    DELETE FIELD
DELFLD/DELDELETE EXPRESSION

FORM PROCESSOR Where-external-routine-used List

| System Module | Module Name | Module Purpose |
| ------ | ------ | ------- |
| | GETCUR | GET CURSOR POSITION |
| | OPNFRM/BDBBUILD | DEFAULT BUFFER |
| | PTHPTR | GET PATH POINTER |
| | RSVEXP/BLDBUILD | EXPRESSION TREE |
| | UIS/STRTPDSTART | PHYSICAL DEVICE |

FREMSG
| | INSCR | INPUT SCREEN |
| | RMVFPD | REMOVE FORM PROCESSOR DATA STRUCTURE |

FSEARCH

UIS/STRTPDSTART PHYSICAL DEVICE

FSEEK

MONITR/MAIMAIN MODULE FOR MONITOR/UIS/FP PROCESS

FTELL
| | GDVINP | GET DEVICE INPUT |
| | MONITR/MAIMAIN | MODULE FOR MONITOR/UIS/FP PROCESS |

FWRITE
| | GDVINP | GET DEVICE INPUT |
| | MONITR/MAIMAIN | MODULE FOR MONITOR/UIS/FP PROCESS |
| | PDVOTP | PUT DEVICE OUTPUT |

GETC
| | OPNFRM/BDBBUILD | DEFAULT BUFFER |
| | OPNFRM/BTBBUILD | TEXT BUFFER |

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FORM PROCESSOR Where-external-routine-used List

| System Module | Module Name | Module Purpose |
| ------ | ------ | ------- |

GETW

        MONITR/MAIMAIN MODULE FOR MONITOR/UIS/FP PROCESS

GVTICMD

        GDVINP    GET DEVICE INPUT
        MAKUSR    MAKE USER
        MONITR/MAIMAIN MODULE FOR MONITOR/UIS/FP PROCESS
        OISCR/EVTBEMPTY VTI BUFFER

GVTINW

        CALLFP    CALL FP ROUTINES

INITAL

        MONITR/MAIMAIN MODULE FOR MONITOR/UIS/FP PROCESS

ISALNUM

        PTHPTR    GET PATH POINTER

ISCNTRL

        OPNFRM/BDBBUILD DEFAULT BUFFER
        OPNFRM/BTBBUILD TEXT BUFFER

ISDIGIT

        CMPFLD/EVAEVALUATE FIELD EXPRESSION
        PTHPTR    GET PATH POINTER

FORM PROCESSOR Where-external-routine-used List

| System | Module | Module |
|--------|--------|--------|
| Module | Name   | Purpose |
| ------ | ------ | ------- |

RSVEXP/BLDBUILD EXPRESSION TREE

ISEND

UIS/STRTAPSTART APPLICATION
UIS/STRTPDSTART PHYSICAL DEVICE

ISPRINT

OISCR/EVTBEMPTY VTI BUFFER
PDATA/PUTBPUT BUFFER
PMSGLS     PUT MESSAGE LINE STRING

LOCALTIME

OISCR/DSPSDISPLAY SCREEN

MALLOC

CMPFLD/EVAEVALUATE FIELD EXPRESSION
COPFLD/CPYINTERNAL COPY FIELD
GETCUR     GET CURSOR POSITION
MAKFLD     MAKE FIELD
OPNFRM/BDBBUILD DEFAULT BUFFER
OPNFRM/BFLBUILD FIELD DEFAULT BUFFER
OPNFRM/BRPBUILD RELATIVE POSITION NODE
OPNFRM/BTBBUILD TEXT BUFFER
OPNFRM/PITPROCESS ITEM
OPNFRM/PTRPROCESS TEXT RECORD
PMSGLS     PUT MESSAGE LINE STRING
PTHPTR     GET PATH POINTER
RSVEXP/BLDBUILD EXPRESSICN TREE

MATOI

FORM PROCESSOR Where-external-routine-used List

| System Module | Module Name | Module Purpose |
|------|------|------|
| | CALLFP | CALL FP ROUTINES |
| | OISCR/EVTBEMPTY | VTI BUFFER |
| | UIS/PRCINPPRCESS | INPUT |
| | UIS/PRCWNDPRCESS | WINDOW |
| MAX | | |
| | ADDELM | ADD ELEMENT |
| | COPFRM | COPY FORM |
| | MONITR/MAIMAIN | MODULE FOR MONITOR/UIS/FP PROCESS |
| | OPNFRM/PARPROCESS | ARRAY |
| | POSCUR | POSITION CURSOR |
| | RMVPAG | REMOVE PAGE |
| | UIS/PRCINPPRCESS | INPUT |
| MEMCMP | | |
| | CALLFP | CALL FP ROUTINES |
| | FNDMSG/CODCODE | SEARCH |
| | INSCR | INPUT SCREEN |
| | MONITR/MAIMAIN | MODULE FOR MONITOR/UIS/FP PROCESS |
| | OPNFRM/PITPROCESS | ITEM |
| | PDATA/PUTBPUT | BUFFER |
| | PDVOTP | PUT DEVICE OUTPUT |
| | TRMDRV | TERMINATE DEVICE DRIVER |
| | TRMUSR | TERMINATE USER |
| | UIS | USR INTERFACE SERVICES |
| | UIS/FLWNSTFILL | WINDOW MANAGER STRUCTURE |
| | UIS/PRCINPPRCESS | INPUT |
| | UIS/PRCWNDPRCESS | WINDOW |
| | UIS/STRTAPSTART | APPLICATION |
| | UIS/STRTPDSTART | PHYSICAL DEVICE |
| MEMCPY | | |
| | ADDELM | ADD ELEMENT |
| | ADDFRM | ADD FORM TO WINDOW |

FORM PROCESSOR Where-external-routine-used List

| System Module | Module Name | Module Purpose |
|------|------|------|
| | CALLFP | CALL FP ROUTINES |
| | CHGLDV | CHANGE LOGICAL DEVICE |
| | CLSFRM | CLOSE FORM |
| | CLSLDV | CLOSE LOGICAL DEVICE |
| | CMPFLD | COMPUTE FIELD |
| | CMPFLD/EVA | EVALUATE FIELD EXPRESSION |
| | COPFLD/CPY | INTERNAL COPY FIELD |
| | FNDMSG/COD | CODE SEARCH |
| | FNDMSG/OUM | OPEN USER MESSAGE FILE |
| | GDATA | GET DATA |
| | GDATA/GETB | GET BUFFER |
| | GDATLN | GET DATA LENGTH |
| | GDVINP | GET DEVICE INPUT |
| | GETATT | GET ATTRIBUTE |
| | GETBAK | GET BACKGROUND ATTRIBUTE |
| | GETCUR | GET CURSOR POSITION |
| | GETCUR/CON | CONCATENATE STRING TO CURRENT NAME |
| | GPAGE | GET PAGE |
| | GWINDO | GET WINDOW |
| | INITVT | INITIAL VIRTUAL TERMINAL INTERFACE |
| | INQLDV | INQUIRE LOGICAL DEVICE |
| | MONITR/MAI | MAIN MODULE FOR MONITOR/UIS/FP PROCESS |
| | OISCR/ADDC | ADD COMMAND TO BUFFER |
| | OISCR/EVTB | EMPTY VTI BUFFER |
| | OISCR/RSTI | RESET INPUT FLAGS |
| | ONWISC | OUTPUT (NO WAIT) / INPUT SCREEN |
| | OPNFRM | OPEN FORM |
| | OPNFRM/BFL | BUILD FIELD DEFAULT BUFFER |
| | OPNFRM/PIT | PROCESS ITEM |
| | OPNLDV | OPEN LOGICAL DEVICE |
| | OUTSCR | OUTPUT SCREEN |
| | PARFQN | PARSE FULLY QUALIFIED NAME |
| | PDATA | PUT FORM DATA |
| | PDATA/PUTB | PUT BUFFER |
| | PDVOTP | PUT DEVICE OUTPUT |
| | PUTATT | PUT ATTRIBUTES |
| | PUTBAK | PUT BACKGROUND ATTRIBUTES |
| | PUTCUR | PUT CURSOR |
| | PUTLOC | PUT LOCATION |
| | RMVPAG | REMOVE PAGE |

FORM PROCESSOR Where-external-routine-used List

| System Module | Module Name | Module Purpose |
| --- | --- | --- |
| | RPLFRM | REPLACE FORM |
| | TERMVT | TERMINATE VIRTUAL TERMINAL INTERFACE |
| | TRMDRV | TERMINATE DEVICE DRIVER |
| | TRMUSR | TERMINATE USER |
| | UIS | USR INTERFACE SERVICES |

MEMSET

| | CALLFP | CALL FP ROUTINES |
| --- | --- | --- |
| | CANITM | CANONICALIZE ITEM |
| | CMPFLD | COMPUTE FIELD |
| | FNDMSG | FIND MESSAGE |
| | GDVINP | GET DEVICE INPUT |
| | GETATT | GET ATTRIBUTE |
| | GETBAK | GET BACKGROUND ATTRIBUTE |
| | GETCUR | GET CURSOR POSITION |
| | GPAGE | GET PAGE |
| | MONITR/MAIMAIN | MODULE FOR MONITOR/UIS/FP PROCESS |
| | OISCR/EVTBEMPTY | VTI BUFFER |
| | PARFQN | PARSE FULLY QUALIFIED NAME |
| | PDVOTP | PUT DEVICE OUTPUT |
| | PMSGLS | PUT MESSAGE LINE STRING |
| | TRMDRV | TERMINATE DEVICE DRIVER |
| | TRMUSR | TERMINATE USER |
| | UIS | USR INTERFACE SERVICES |
| | UIS/FLWNSTFILL | WINDOW MANAGER STRUCTURE |
| | UIS/PRCWNDPRCESS | WINDOW |

MIN

| | CALLFP | CALL FP ROUTINES |
| --- | --- | --- |
| | MONITR/MAIMAIN | MODULE FOR MONITOR/UIS/FP PROCESS |
| | OISCR/PROCPROCESS | FIELD |
| | POSCUR | POSITION CURSOR |
| | PTHPTR/FIEMATCH | FIELD |
| | UIS/PRCINPPRCESS | INPUT |

FORM PROCESSOR Where-external-routine-used List

| System Module | Module Name | Module Purpose |
| ------ | ------ | ------- |

NSEND

| | CALLFP | CALL FP ROUTINES |
| | MONITR/MAI | MAIN MODULE FOR MONITOR/UIS/FP PROCESS |
| | PDVOTP | PUT DEVICE OUTPUT |
| | TRMDRV | TERMINATE DEVICE DRIVER |

OBIND

| | DBCFNC | CHECK FUNCTION |
| | DBCROL | CHECK ROLE |

ODFINN

| | DBCFNC | CHECK FUNCTION |
| | DBCROL | CHECK ROLE |

OEXEC

| | DBCFNC | CHECK FUNCTION |
| | DBCROL | CHECK ROLE |

OFETCH

| | DBCFNC | CHECK FUNCTION |
| | DBCROL | CHECK ROLE |

OSQL3

| | DBCFNC | CHECK FUNCTION |
| | DBCROL | CHECK ROLE |

FORM PROCESSOR Where-external-routine-used List

| System Module | Module Name | Module Purpose |
| --- | --- | --- |

PBPTR

    COPFLD/CPYINTERNAL COPY FIELD
    OISCR/RSTIRESET INPUT FLAGS

PFINP

    INSCR      INPUT SCREEN

PRINTF

    PRNAP      PRINT APLICATION
    PRNFLD     PRINT FIELD
    PRNPD      PRINT PHYSICAL DEVICE
    PRNUID     PRINT UID
    PRNUSR     PRINT USER

PUTC

    MONITR/MAIMAIN MODULE FOR MONITOR/UIS/FP PROCESS

PUTW

    GDVINP    GET DEVICE INPUT
    MONITR/MAIMAIN MODULE FOR MONITOR/UIS/FP PROCESS

RCV

    MONITR/MAIMAIN MODULE FOR MONITOR/UIS/FP PROCESS

REWIND

FORM PROCESSOR Where-external-routine-used List

```
System      Module      Module
Module      Name        Purpose
------      ------      -------

            FNDMSG/CODCODE SEARCH


SBIT
            COPFLD/CPYINTERNAL COPY FIELD
            MAKAP      MAKE APLICATION STRUTURE
            STUPFP     SET UP FORM PROCESSOR DATA STRUCTURES


SIGABT
            TRMUSR     TERMINATE USER
            UIS/STRTAPSTART APPLICATION
            UIS/STRTPDSTART PHYSICAL DEVICE


SNDVTI
            CALLFP     CALL FP ROUTINES


SPRINTF
            CALLFP     CALL FP ROUTINES
            CMPFLD/EVAEVALUATE FIELD EXPRESSION
            FNDMSG     FIND MESSAGE
            FNDMSG/OUMOPEN USER MESSAGE FILE
            GETCUR     GET CURSOR POSITION
            MAKUSR     MAKE USER
            MONITR/MAIMAIN MODULE FOR MONITOR/UIS/FP PROCESS
            OISCR/DSPSDISPLAY SCREEN
            OISCR/FVTBFILL VTI BUFFER
            OISCR/PROCPROCESS FIELD
            OISCR/PROCPROCESS WINDOW
            OPNFRM     OPEN FORM
            RMVAP      REMOVE APPLICATION
            RMVFPD     REMOVE FORM PROCESSOR DATA STRUCTURE
            UIS        USR INTERFACE SERVICES
            UIS/FLWINFFILL WINDOW INFORMATION
```

FORM PROCESSOR Where-external-routine-used List

| System Module | Module Name | Module Purpose |
|---|---|---|
| | UIS/FLWNST | FILL WINDOW MANAGER STRUCTURE |
| | UIS/PRCINP | PRCESS INPUT |
| | UIS/PRCWND | PRCESS WINDOW |
| | UIS/STRTAP | START APPLICATION |
| | UIS/STRTPD | START PHYSICAL DEVICE |
| STRASN | | |
| | COPFLD/CPY | INTERNAL COPY FIELD |
| | MABSAT | MAP ABSOLUTE ATTRIBUTE |
| | OISCR/EVTB | EMPTY VTI BUFFER |
| | OISCR/GATI | GET ATTRIBUTE INFO |
| | OPNFRM/BRP | BUILD RELATIVE POSITION NODE |
| | OPNFRM/PWI | PROCESS WINDOW |
| | PTHPTR | GET PATH POINTER |
| | RMVPAG | REMOVE PAGE |
| | RSVATT | RESOLVE ATTRIBUTE |
| | RSVATT/RSV | RESOLVE REST |
| | STUPFP | SET UP FORM PROCESSOR DATA STRUCTURES |
| STRCAT | | |
| | OISCR/PROC | PROCESS FIELD |
| STRCHR | | |
| | MONITR/MAI | MAIN MODULE FOR MONITOR/UIS/FP PROCESS |
| | PARFQN | PARSE FULLY QUALIFIED NAME |
| | RSVEXP/BLD | BUILD EXPRESSION TREE |
| STRCMP | | |
| | ADDELM | ADD ELEMENT |
| | FNDFLD | FIND FIELD |
| | GATDEF | GET ATTRIBUTE DEFINITION |
| | GOFPTR | GET OPEN FROM POINTER |

FORM PROCESSOR Where-external-routine-used List

| System Module | Module Name | Module Purpose |
| --- | --- | --- |
| | | |

MONITR/GETGET PHYSICAL DEVICE
MONITR/MAIMAIN MODULE FOR MONITOR/UIS/FP PROCESS
OPNFRM/PFRPROCESS FORM RECORD
PTHPTR/FIEMATCH FIELD
PTHPTR/FOUHAS ANYTHING BEEN FOUND?
SFPDAP    SET FORM PROCESSOR DATA STRUCTURE FOR
          APLICATION
UIS/PRCINPPRCESS INPUT
UIS/STRTPDSTART PHYSICAL DEVICE

STRCPY
     MAKFLD    MAKE FIELD

STRLEN
     CALLFP    CALL FP ROUTINES
     CMPFLD    COMPUTE FIELD
     CMPFLD/EVAEVALUATE FIELD EXPRESSION
     FNDMSG    FIND MESSAGE
     GDVINP    GET DEVICE INPUT
     GETATT    GET ATTRIBUTE
     GETBAK    GET BACKGROUND ATTRIBUTE
     GETCUR/CONCONCATENATE STRING TO CURRENT NAME
     GPAGE     GET PAGE
     MAKUSR    MAKE USER
     OISCR/FVTBFILL VTI BUFFER
     OISCR/PROCPROCESS FIELD
     OISCR/PROCPROCESS WINDOW
     OPNFRM/PITPROCESS ITEM
     PARFQN    PARSE FULLY QUALIFIED NAME
     PDVOTP    PUT DEVICE OUTPUT
     PMSGLS    PUT MESSAGE LINE STRING
     RMVFPD    REMOVE FORM PROCESSOR DATA STRUCTURE
     TRMDRV    TERMINATE DEVICE DRIVER
     TRMUSR    TERMINATE USER
     UIS       USR INTERFACE SERVICES
     UIS/PRCINPPRCESS INPUT

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FORM PROCESSOR Where-external-routine-used List

| System Module | Module Name | Module Purpose |
| --- | --- | --- |
| | UIS/STRTAPSTART | APPLICATION |
| | UIS/STRTPDSTART | PHYSICAL DEVICE |
| | | |
| STRNCMP | | |
| | FNDMSG | FIND MESSAGE |
| | SYSMSG | SYSTEM MESSAGE ROUTINE |
| | | |
| STRNCPY | | |
| | ESCPY | EXTERNAL STRING COPY |
| | | |
| STRNLOC | | |
| | CANITM | CANONICALIZE ITEM |
| | | |
| STRNUPC | | |
| | CANITM | CANONICALIZE ITEM |
| | | |
| STRRCHR | | |
| | PARFQN | PARSE FULLY QUALIFIED NAME |
| | | |
| STRUPC | | |
| | CLSFRM | CLOSE FORM |
| | COPFRM | COPY FORM |
| | GATDEF | GET ATTRIBUTE DEFINITION |
| | OPNFRM | OPEN FORM |
| | | |
| TIME | | |

FORM PROCESSOR Where-external-routine-used List

| System Module | Module Name | Module Purpose |
| --- | --- | --- |
| | OISCR/DSPSDISPLAY SCREEN | |
| TOUPPER | | |
| | PTHPTR | GET PATH POINTER |
| TRMNAT | | |
| | MONITR/MAIMAIN MODULE FOR MONITOR/UIS/FP PROCESS | |

3.10.7  <u>Main Program Parts List</u>

The following lists each Main Program listed in 3.10.1
and all the modules which are called either by that module
itself or by any of the documented modules which it calls.  It
is possible for a non-main module to be listed more that once
if it is called by multiple modules.  The called modules, in
this case known as program parts, are marked as to whether
they are documented here.  If so, the phrase "well-defined
module" appears by the module name, if not it is an "external
"routine".  The Purpose of the Main Program module is listed
as well.

FORM PROCESSOR Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
| --- | --- | --- |
| MONITR/MAIN | | Purpose--›MAIN MODULE FOR MONITOR/UIS/FP PROCESS |
| | ABORT | External routine |
| | ABS | External routine |
| | ACRPOS | Well-defined module |
| | ADDELM | Well-defined module |
| | ADDFRM | Well-defined module |
| | ATOI | External routine |
| | BLDCMD | External routine |
| | BLEN | External routine |
| | CALLFP | Well-defined module |
| | CALLOC | External routine |
| | CANITM | Well-defined module |
| | CBIT | External routine |
| | CBPTR | External routine |
| | CFREE | External routine |
| | CHGLDV | Well-defined module |
| | CHGPRC | Well-defined module |
| | CLSFRM | Well-defined module |
| | CLSLDV | Well-defined module |
| | CMPFLD | Well-defined module |
| | CMPFLD/EVAL | Well-defined module |
| | COPFLD | Well-defined module |
| | COPFLD/CPYFLD | Well-defined module |
| | COPFRM | Well-defined module |
| | CURPOS | Well-defined module |
| | CURPOS/FNDCP | Well-defined module |
| | DBCFNC | Well-defined module |
| | DBCLSE | External routine |
| | DBCOM | External routine |
| | DBCROL | Well-defined module |
| | DBCUPR | External routine |
| | DBGAPD | External routine |
| | DBOPEN | External routine |
| | DELFLD | Well-defined module |
| | DELFLD/DELEXP | Well-defined module |
| | DSPMSG | External routine |
| | ERRPRO | External routine |
| | ESCPY | Well-defined module |
| | FCLOSE | External routine |

FORM PROCESSOR Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
| --- | --- | --- |
| | FEOF | External routine |
| | FERROR | External routine |
| | FFBCA | External routine |
| | FNDFLD | Well-defined module |
| | FNDMSG | Well-defined module |
| | FNDMSG/CODSCH | Well-defined module |
| | FNDMSG/OUMSGF | Well-defined module |
| | FNFPWN | Well-defined module |
| | FOPEN | External routine |
| | FPRINTF | External routine |
| | FREAD | External routine |
| | FREE | External routine |
| | FREMSG | External routine |
| | FSEARCH | External routine |
| | FSEEK | External routine |
| | FTELL | External routine |
| | FUISWN | Well-defined module |
| | FWRITE | External routine |
| | GATDEF | Well-defined module |
| | GDATA | Well-defined module |
| | GDATA/GETBUF | Well-defined module |
| | GDATLN | Well-defined module |
| | GDATLN/GBUFLN | Well-defined module |
| | GDVINP | Well-defined module |
| | GETATT | Well-defined module |
| | GETBAK | Well-defined module |
| | GETC | External routine |
| | GETCUR | Well-defined module |
| | GETCUR/CONCAT | Well-defined module |
| | GETW | External routine |
| | GOFPTR | Well-defined module |
| | GPAGE | Well-defined module |
| | GVTICMD | External routine |
| | GVTINW | External routine |
| | GWINDO | Well-defined module |
| | INITAL | External routine |
| | INITVT | Well-defined module |
| | INQLDV | Well-defined module |
| | ISALNUM | External routine |
| | ISCNTRL | External routine |

FORM PROCESSOR Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
| --- | --- | --- |
| | ISDIGIT | External routine |
| | ISEND | External routine |
| | ISPRINT | External routine |
| | LOCALTIME | External routine |
| | MABSAT | Well-defined module |
| | MAKAP | Well-defined module |
| | MAKFLD | Well-defined module |
| | MAKFPD | Well-defined module |
| | MAKPD | Well-defined module |
| | MAKUSR | Well-defined module |
| | MALLOC | External routine |
| | MATOI | External routine |
| | MAX | External routine |
| | MEMCMP | External routine |
| | MEMCPY | External routine |
| | MEMSET | External routine |
| | MIN | External routine |
| | MONITR/GETPD | Well-defined module |
| | NSEND | External routine |
| | OBIND | External routine |
| | ODFINN | External routine |
| | OEXEC | External routine |
| | OFETCH | External routine |
| | OISCR/ADDCMD | Well-defined module |
| | OISCR/CMPALL | Well-defined module |
| | OISCR/DSPSCR | Well-defined module |
| | OISCR/FVTBUF | Well-defined module |
| | OISCR/GATINF | Well-defined module |
| | OISCR/PROCFLD | Well-defined module |
| | OISCR/PROCWIN | Well-defined module |
| | OISCR/RSTINP | Well-defined module |
| | OISCR/SETWIN | Well-defined module |
| | ONWISC | Well-defined module |
| | OPNFRM | Well-defined module |
| | OPNFRM/BDBUFF | Well-defined module |
| | OPNFRM/BFLDDB | Well-defined module |
| | OPNFRM/BRPNOD | Well-defined module |
| | OPNFRM/BTBUFF | Well-defined module |
| | OPNFRM/PARY | Well-defined module |
| | OPNFRM/PDREC | Well-defined module |

FORM PROCESSOR Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
|---------------|-------------|-------------|
| | OPNFRM/PFREC | Well-defined module |
| | OPNFRM/PFRM | Well-defined module |
| | OPNFRM/PITM | Well-defined module |
| | OPNFRM/PTREC | Well-defined module |
| | OPNFRM/PWIN | Well-defined module |
| | OPNLDV | Well-defined module |
| | OSQL3 | External routine |
| | OUTSCR | Well-defined module |
| | PARFQN | Well-defined module |
| | PBPTR | External routine |
| | PDATA | Well-defined module |
| | PDATA/PUTBUF | Well-defined module |
| | PDVOTP | Well-defined module |
| | PMSGLC | Well-defined module |
| | PMSGLS | Well-defined module |
| | POSCUR | Well-defined module |
| | POSCUR/FNFITM | Well-defined module |
| | PTHPTR | Well-defined module |
| | PTHPTR/ARRAY | Well-defined module |
| | PTHPTR/FIELD | Well-defined module |
| | PTHPTR/FORM | Well-defined module |
| | PTHPTR/FOUND | Well-defined module |
| | PTHPTR/ITEM | Well-defined module |
| | PTHPTR/WINDOW | Well-defined module |
| | PUTATT | Well-defined module |
| | PUTATT/AABSAT | Well-defined module |
| | PUTBAK | Well-defined module |
| | PUTC | External routine |
| | PUTCUR | Well-defined module |
| | PUTLOC | Well-defined module |
| | PUTW | External routine |
| | RCV | External routine |
| | REWIND | External routine |
| | RMVAP | Well-defined module |
| | RMVFPD | Well-defined module |
| | RMVPAG | Well-defined module |
| | RMVPD | Well-defined module |
| | RPLFRM | Well-defined module |
| | RSVATT | Well-defined module |
| | RSVATT/RSVRST | Well-defined module |

FORM PROCESSOR Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
|---|---|---|
| | RSVEXP | Well-defined module |
| | RSVEXP/BLDEXP | Well-defined module |
| | SBIT | External routine |
| | SFPDAP | Well-defined module |
| | SIGABT | External routine |
| | SNDVTI | External routine |
| | SPRINTF | External routine |
| | STRASN | External routine |
| | STRCAT | External routine |
| | STRCHR | External routine |
| | STRCMP | External routine |
| | STRCPY | External routine |
| | STRLEN | External routine |
| | STRNCMP | External routine |
| | STRNCPY | External routine |
| | STRNLOC | External routine |
| | STRNUPC | External routine |
| | STRRCHR | External routine |
| | STRUPC | External routine |
| | STUPFP | Well-defined module |
| | SYSMSG | Well-defined module |
| | TERMVT | Well-defined module |
| | TIME | External routine |
| | TOUPPER | External routine |
| | TRMDRV | Well-defined module |
| | TRMNAT | External routine |
| | TRMUSR | Well-defined module |
| | UIS | Well-defined module |
| | UIS/FLWINF | Well-defined module |
| | UIS/FLWNST | Well-defined module |
| | UIS/PRCINP | Well-defined module |
| | UIS/PRCWND | Well-defined module |
| | UIS/STRTAP | Well-defined module |
| | UIS/STRTPD | Well-defined module |
| | ULKFPD | Well-defined module |

FORM PROCESSOR Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
| --- | --- | --- |
| PRNDSP | | Purpose--›PRINT DISPLAY LIST |
| | DOATTR | External routine |
| | DOITEM | External routine |
| | DOWIND | External routine |
| | PRINTF | External routine |
| | PRNFLD | Well-defined module |

FORM PROCESSOR Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
| --- | --- | --- |
| PRNOPN | | Purpose--›PRINT OPEN LIST |
| | DOATTR | External routine |
| | DOITEM | External routine |
| | DOWIND | External routine |
| | PRINTF | External routine |
| | PRNFLD | Well-defined module |

FORM PROCESSOR Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
|---|---|---|
| PRNUID | | Purpose--›PRINT UID |
| | PRINTF | External routine |
| | PRNAP | Well-defined module |
| | PRNPD | Well-defined module |

FORM PROCESSOR Main Program Parts List

| Main Pgm Name | Module Name | Module Type |
|---------------|-------------|-------------|
| -------- | ------ | ------ |
| PRNUSR | | Purpose--›PRINT USER |
| | PRINTF | External routine |
| | PRNAP | Well-defined module |
| | PRNPD | Well-defined module |

### 3.10.8  Module Documentation

The following documentation describes information
which is specific to each individual module being documented
in this specification as listed in section 3.10.2.  It
provides a compact way of getting information that would be
otherwise buried within each module's source code.

The specific items in this module documentation have the
following meanings:

NAME:                         Name of program Module.

PURPOSE:                      Purpose of Module as detailed in the
                              source code.

LANGUAGE:                     Programming language source code is
                              written in.
                              The choices are:
                                            VAX-11 FORTRAN

            C                             (I/S-1 Workbench 'C')
                                            VAX-11 COBOL

MODULE TYPE:                  Whether a Program, Subroutine, or
                              Function.

SOURCE FILE:                  Name of Source File from file
                              specification.

SOURCE FILE TYPE:             Source File Extension from file
                              specification.

HOST:                         Whether this is a host-dependent
                              routine (VAX or IBM) or blank if
                              host-independent.

SUBSYSTEM:                    IISS sub-system this file resides in.

SUBDIRECTORY:                 Sub-directory of that subsystem in
                              which this file resides.

DOCUMENTATION GROUP:          Name of documentation group of which
                              this source file is a member.

DESCRIPTION:                  A description of the module as otained

from the source code.

ARGUMENTS:                 The arguments with which this routine
                           is called if it is a Subroutine or a
                           Function.

INCLUDE FILES:             A list of all the files that are
                           included into this module as well as
                           their purposes.

ROUTINES CALLED:           Subroutines or Functions, either
                           documented or external, called by
                           this module, if any.

CALLED DIRECTLY BY:        The documented routines which call
                           this module, if any.

USED IN MAIN PROGRAM(S):   The documented Main Programs which
                           contain this module in their parts
                           list according to the list in section
                           3.10.7.


The Module Documentation is arranged alphabetically according
to Module Name.

FORM PROCESSOR Module Documentation


NAME:                     ACRPOS
PURPOSE:                  ABSOLUTIZE CURSOR POSITION OF FIELD
LANGUAGE:                 C
MODULE TYPE:              SUBROUTINE
FUNCTION TYPE:            VOID ()
SOURCE FILE:              ACRPOS
SOURCE FILE TYPE:         .C
HOST:
SUBSYSTEM:                UI
SUBDIRECTORY:             FP
DOCUMENTATION GROUP:      FORMPROC

DESCRIPTION:
-------------

  SYNOPSIS
     VOID ACRPOS(DP,ABSPOS)
        FIELD     *DP;
        POSITION *ABSPOS;


     INPUTS/OUTPUTS:


     INPUTS:
        DP - FIELD WHOSE ROW AND COL WANT TO ABSOLUTIZED
        ADDRESS OF STURCTURE FOR RETURNING VALUES OF:
                                                      ABSOLUTE
                      ROW
                                                      ABSOLUTE
                      COL
     OUTPUTS:
        STRUCTURE CONTAINING:
                              ABSOLUTE ROW OF FIELD
                              ABSOLUTE COL OF FIELD

  DESCRIPTION
     THIS MODULE ABSOLUTIZES A FIELD'S ROW AND COL BY GOING
                      BACK UP
     CHILD PARENT TREE AND ADDING EACH SUCCESSIVE PARENT'S ROW
                      AND COL
     TO SUM OF CHILDS .

ARGUMENTS:
----------
  DP =        FIELD *
  ABSPOS =      POSITION *


INCLUDE FILES:
--------------
  STDTYP    - STANDARD TYPE DEFINITIONS
  FPD       - FORM PROCESSOR DATA


CALLED DIRECTLY BY:
-------------------
  CURPOS/FNDCP - FIND CURSOR POSITION
  GETCUR     - GET CURSOR POSITION


USED IN MAIN PROGRAM(S):
------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


```
NAME:                   ADDELM
PURPOSE:                ADD ELEMENT
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          INT ()
SOURCE FILE:            ADDELM
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC
```

DESCRIPTION:
-------------

```
  SYNOPSIS
    ADDELM(EPATH, PCOUNT, RCODE)
        EPATH    EPATH;
        INT *PCOUNT;
        CHAR RCODE[RCODE_LEN];


      INPUTS:
        EPATH - ARRAY TO ADD ELEMENT TO

      OUTPUTS:
        PCOUNT - INDEX OF ELEMENT ADDED
        RCODE  - RETURN CODE OF OPERATION
```

  DESCRIPTION
    ADDS AN ELEMENT TO AN OPEN ENDED ARRAY.

ARGUMENTS:
-----------

```
  EPATH =        EPATH
  PCOUNT =       INT *
  RCODE =        CHAR [RCODE_LEN ]
```


INCLUDE FILES:
--------------

```
  STDTYP      - STANDARD TYPE DEFINITIONS
```

```
FPD          - FORM PROCESSOR DATA
FPCODE       - FORM PROCESSOR RETURN CODES
```

ROUTINES CALLED:
----------------

```
ESCPY        - EXTERNAL STRING COPY
PTHPTR       - GET PATH POINTER
MEMCPY
ABS
SYSMSG       - SYSTEM MESSAGE ROUTINE
MAX
RSVEXP       - RESOLVE EXPRESSIONS
COPFLD       - COPY FIELD
STRCMP
GOFPTR       - GET OPEN FROM POINTER
```

CALLED DIRECTLY BY:
-------------------

```
CALLFP       - CALL FP ROUTINES
```

USED IN MAIN PROGRAM(S):
------------------------

```
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation


NAME:                 ADDFRM
PURPOSE:              ADD FORM TO WINDOW
LANGUAGE:             C
MODULE TYPE:         FUNCTION
FUNCTION TYPE:       FORTRAN VOID ()
SOURCE FILE:          ADDFRM
SOURCE FILE TYPE:    .C
HOST:
SUBSYSTEM:           UI
SUBDIRECTORY:        FP
DOCUMENTATION GROUP:  FORMPROC


DESCRIPTION:
------------


  SYNOPSIS
     FORTRAN VOID ADDFRM(EWPATH, EFNAME, PAGEP, RCODE)
         EPATH EWPATH;
         ENAME EFNAME;
         INT   *PAGEP;
         CHAR  RCODE[];

     INPUTS:
         EWPATH - PATH NAME OF WINDOW TO ADD FORM TO
         EFNAME - NAME OF FORM TO ADD TO WINDOW
     OUTPUTS:
         PAGEP - PAGE NUMBER OF ADDED FORM
         RCODE - RETURN CODE

  DESCRIPTION
     ADDRFRM ADDS A FORM TO A WINDOW.

ARGUMENTS:
----------

  EWPATH =        EPATH
  EFNAME =        ENAME
  PAGEP =         INT *
  RCODE =         CHAR []


INCLUDE FILES
-------------

  STDTYP        STANDARD TYPE DEFINITIONS

```
FPD         - FORM PROCESSOR DATA
FPCODE      - FORM PROCESSOR RETURN CODES
```

ROUTINES CALLED:
----------------

```
ESCPY       - EXTERNAL STRING COPY
PTHPTR      - GET PATH POINTER
SYSMSG      - SYSTEM MESSAGE ROUTINE
COPFRM      - COPY FORM
MEMCPY
```

CALLED DIRECTLY BY:
-------------------

```
CALLFP      - CALL FP ROUTINES
UIS         - USR INTERFACE SERVICES
```

USED IN MAIN PROGRAM(S):
------------------------

```
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```
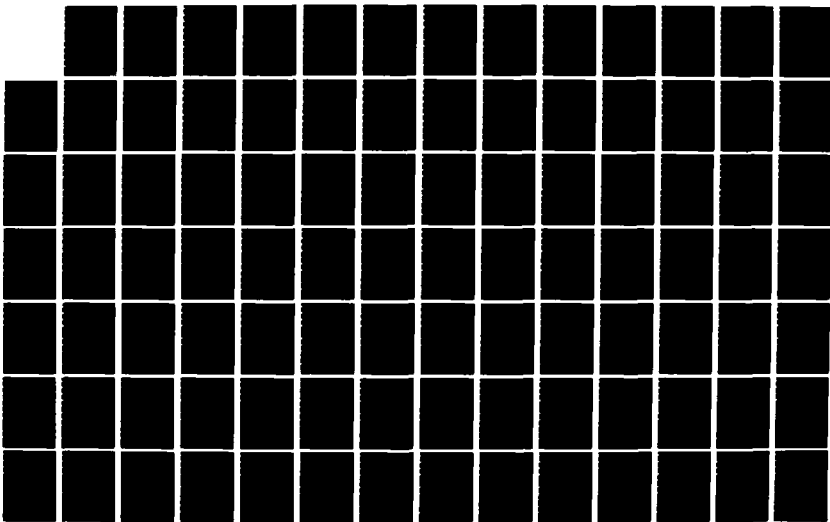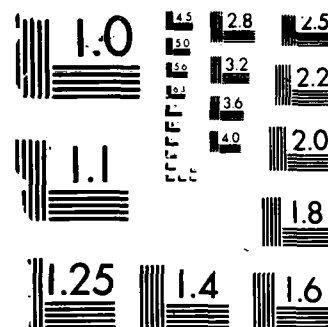
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963 A

FORM PROCESSOR Module Documentation

NAME:                   ADJSTR
PURPOSE:                ADJUST FORM PROCESSOR STRUSCTURE
LANGUAGE:               C
MODULE TYPE:            SUBROUTINE
FUNCTION TYPE:          VOID ()
SOURCE FILE:            ADJSTR
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC

DESCRIPTION:
--------------

  SYNOPSIS
     VOID GARPOS(DP)
        FIELD              *DP;

     INPUTS/OUTPUTS:


     INPUTS:
        DP - FIELD WHOSE CHANGE IN ROW, COL, WIDTH,OR DEPTH
                     ADJUSTING FOR

     OUTPUTS:
       NONE

  DESCRIPTION
     THIS MODULE ADJUSTS PARENT ARRAY STRUCTURES FOR CHANGE IN
                     A WINDOW
     ELIMENT OF ARRAY WHOSE LOCATION OR SIZE HAS CHANGED

ARGUMENTS:
-----------
  DP =        FIELD *


INCLUDE FILES:
---------------
  STDTYP      - STANDARD TYPE DEFINITIONS
  FPD         - FORM PROCESSOR DATA

ROUTINES CALLED:
----------------
  ABS
  ADJSTR      - ADJUST FORM PROCESSOR STRUSCTURE

CALLED DIRECTLY BY:
-------------------
  ADJSTR      - ADJUST FORM PROCESSOR STRUSCTURE

FORM PROCESSOR Module Documentation

NAME:                  CALLFP
PURPOSE:               CALL FP ROUTINES
LANGUAGE:              C
MODULE TYPE:           SUBROUTINE
FUNCTION TYPE:         VOID ()
SOURCE FILE:           CALLFP
SOURCE FILE TYPE:      .C
HOST:
SUBSYSTEM:             UI
SUBDIRECTORY:          FP
DOCUMENTATION GROUP:   FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
     VOID CALLFP(APPLCT, LOGCH, INPTREC, LENGTH);
         NAME             APPLCT;
         CHAN             LOGCH;
         INPTREC          *INPTREC;
         REGISTER INT     LENGTH;


     INPUTS/OUTPUTS:


     INPUTS:

         APPLCT  - APPLICATION WHICH IS CALLING FORM PROCESSOR
         LOGCH   - CHANNEL ON WHICH THE APPLICATION IS CALLING
                     FP
         INPTREC - INPUT PARAMETERS FROM THIS APLICATION
         LENGTH  - LENGTH OF BUFFER CONTAINING INPUT PARAMETERS

     OUTPUTS:

        NONE

  DESCRIPTION
        PERFORMS REQUESTED FP CALLS USING INPUT PARAMETERS
                     FOUND IN
        INPTREC.

ARGUMENTS:
----------

  APPLCT =       NAME
  LOGCH =        CHAN
  INPTREC =      INPTREC *
  LENGTH =       INT


INCLUDE FILES:
--------------

  STDTYP     - STANDARD TYPE DEFINITIONS
  FPD        - FORM PROCESSOR DATA
  FPCODE     - FORM PROCESSOR RETURN CODES
  NTM        - NTM INTERFACE INCLUDE FILE


ROUTINES CALLED:
----------------

  MEMSET
  MATOI
  RPLFRM     - REPLACE FORM
  RMVPAG     - REMOVE PAGE
  PUTLOC     - PUT LOCATION
  PUTBAK     - PUT  BACKGROUND ATTRIBUTES
  PUTATT     - PUT ATTRIBUTES
  PARFQN     - PARSE FULLY QUALIFIED NAME
  GPAGE      - GET PAGE
  GVTINW
  GETBAK     - GET BACKGROUND ATTRIBUTE
  GETATT     - GET ATTRIBUTE
  GDATA      - GET DATA
  CLSLDV     - CLOSE LOGICAL DEVICE
  CHGLDV     - CHANGE LOGICAL DEVICE
  ADDELM     - ADD ELEMENT
  SPRINTF
  STRLEN
  NSEND
  MEMCMP
  SYSMSG     - SYSTEM MESSAGE ROUTINE
  TERMVT     - TERMINATE VIRTUAL TERMINAL INTERFACE
  SNDVTI
  PUTCUR     - PUT CURSOR
  PMSGLC     - PUT MESSAGE LINE CODE
  PMSGLS     - PUT MESSAGE LINE STRING
  PDATA      - PUT FORM DATA
  OUTSCR     - OUTPUT SCREEN
  OPNLDV     - OPEN LOGICAL DEVICE

```
OPNFRM      - OPEN FORM
ONWISC      - OUTPUT (NO WAIT) / INPUT SCREEN
INQLDV      - INQUIRE LOGICAL DEVICE
INITVT      - INITIAL VIRTUAL TERMINAL INTERFACE
GWINDO      - GET WINDOW
MIN
GETCUR      - GET CURSOR POSITION
MEMCPY
GDATLN      - GET DATA LENGTH
CLSFRM      - CLOSE FORM
ADDFRM      - ADD FORM TO WINDOW
```

CALLED DIRECTLY BY:
--------------------

  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS


USED IN MAIN PROGRAM(S):
--------------------------

  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation

NAME:                  CANITM
PURPOSE:               CANONICALIZE ITEM
LANGUAGE:              C
MODULE TYPE:           SUBROUTINE
FUNCTION TYPE:         VOID ()
SOURCE FILE:           CANITM
SOURCE FILE TYPE:      .C
HOST:
SUBSYSTEM:             UI
SUBDIRECTORY:          FP
DOCUMENTATION GROUP:   FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
    VOID CANITM(DP)
        FIELD *DP;

    INPUTS:
        DP - POINTER TO ITEM TO CANONICALIZE

  DESCRIPTION
    CANITM PERFORMS FORMAT CHANGES ON AN ITEM. POSSIBLE FORMAT
    CHANGES ARE LEFT JUSTIFY, RIGHT JUSTIFY, UPPER CASE AND
    LOWER CASE.

ARGUMENTS:
----------
  DP =        FIELD *


INCLUDE FILES:
--------------

  STDTYP      - STANDARD TYPE DEFINITIONS
  FPD         - FORM PROCESSOR DATA


ROUTINES CALLED:
----------------
  CBPTR
  BLEN
  STRNLOC

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MEMSET
STRNUPC

CALLED DIRECTLY BY:
--------------------
  CMPFLD     - COMPUTE FIELD


USED IN MAIN PROGRAM(S):
--------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


```
NAME:                 CHGLDV
PURPOSE:              CHANGE LOGICAL DEVICE
LANGUAGE:             C
MODULE TYPE:          FUNCTION
FUNCTION TYPE:        FORTRAN VOID ()
SOURCE FILE:          CHGLDV
SOURCE FILE TYPE:     .C
HOST:
SUBSYSTEM:            UI
SUBDIRECTORY:         FP
DOCUMENTATION GROUP:  FORMPROC
```

DESCRIPTION:
------------

```
  SYNOPSIS
     FORTRAN VOID CHGLDV(LDWNID,RCODE)
          INT              *LDWNID;
          CHAR             RCODE[];


     INPUTS/OUTPUTS:


     INPUTS:
       LDWNID - LOGICAL DEVICES TOP WINDOW ID
       ADDRESS OF:
                     RETURN CODE

     OUTPUTS:
       RCODE  - RETURN CODE
```

  DESCRIPTION
     THIS MODULE CHANGES LOGICAL DEVICE TO WHICH APPLICATION
                     RUNS ON.
     IF LOGICAL DEVICE NOT OPNENED WILL RETURN NFPDSTRC ERROR.

ARGUMENTS:
----------

```
  LDWNID =      INT *
  RCODE =       CHAR []
```

INCLUDE FILES:
---------------

   STDTYP     - STANDARD TYPE DEFINITIONS
   FPD        - FORM PROCESSOR DATA
   FPCODE     - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
------------------

   MEMCPY


CALLED DIRECTLY BY:
---------------------

   CALLFP     - CALL FP ROUTINES


USED IN MAIN PROGRAM(S):
--------------------------

   MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                    CHGPRC
PURPOSE:                 CHANGE PRECEDENCE OF WINDOW OR LOGICAL
                         DEVICE
LANGUAGE:                C
MODULE TYPE:             SUBROUTINE
FUNCTION TYPE:           VOID ()
SOURCE FILE:             CHGPRC
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
     VOID CHGPRC(WDP,WFPD)
        FIELD *WDP;
        FPD   *WFPD;


     INPUTS/OUTPUTS:


     INPUTS:
        WDP  - POINTER TO WINDOW TO BE PUT AT TOPMOST PRECEDENCE
        WFPD - POINTER TO LOG DEVICE OF WINDOW TO BE PUT AT
                      TOPMOST PRECEDENCE

     OUTPUTS:
        NONE

  DESCRIPTION
     THIS MODULE PUTS DEIGNATED WINDOW(OR DEVICE) AT BEGINNING
                   OF
     LINK LIST OF WNDOWS AT ITS LEVEL (FSTFPD OR CONPTR)

ARGUMENTS:
----------
  WDP =        FIELD *
  WFPD =       FPD *

INCLUDE FILES:
---------------
   STDTYP      - STANDARD TYPE DEFINITIONS
   FPD         - FORM PROCESSOR DATA


CALLED DIRECTLY BY:
-------------------
   UIS/PRCWND - PRCESS WINDOW


USED IN MAIN PROGRAM(S):
------------------------
   MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                   CLSFRM
PURPOSE:                CLOSE FORM
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          FORTRAN VOID ()
SOURCE FILE:            CLSFRM
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
     FORTRAN VOID CLSFRM(EFNAME, CODEP)
        ENAME EFNAME;
        CHAR  CODEP[];

     INPUTS:
        EFNAME - NAME OF FORM TO CLOSE

     OUTPUTS:
        CODEP - RETURN CODE

  DESCRIPTION

     USE CLSFRM TO CLOSE A FORM.  MEMORY SPACE FOR THE FORM IS
     ELIMINATED SO THAT IT MAY BE ALLOCATED TO ANOTHER FORM.
     NOTE:  CLSFRM DOES NOT CLOSE A FORM IF THAT FORM IS
     CURRENTLY USED ANYWHERE ON THE DISPLAY LIST OR AS A
     SUBFORM TO A FORM ON THE OPEN LIST.

ARGUMENTS:
-----------
  EFNAME =       ENAME
  CODEP =        CHAR []


INCLUDE FILES:
---------------
  STDTYP      - STANDARD TYPE DEFINITIONS


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FPD         - FORM PROCESSOR DATA
FPCODE      - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
-----------------
  ESCPY     - EXTERNAL STRING COPY
  STRUPC
  GOFPTR    - GET OPEN FROM POINTER
  SYSMSG    - SYSTEM MESSAGE ROUTINE
  DELFLD    - DELETE FIELD
  MEMCPY


CALLED DIRECTLY BY:
-------------------
  CALLFP    - CALL FP ROUTINES


USED IN MAIN PROGRAM(S):
------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                 CLSLDV
PURPOSE:              CLOSE LOGICAL DEVICE
LANGUAGE:             C
MODULE TYPE:          FUNCTION
FUNCTION TYPE:        FORTRAN VOID ()
SOURCE FILE:          CLSLDV
SOURCE FILE TYPE:     .C
HOST:
SUBSYSTEM:            UI
SUBDIRECTORY:         FP
DOCUMENTATION GROUP:  FORMPROC


DESCRIPTION:
------------

  SYNOPSIS
     FORTRAN VOID CLSLDV(LDWNID,RCODE)
          INT          *LDWNID;
          CHAR         RCODE[];


     INPUTS/OUTPUTS:


     INPUTS:
       LDWNID - LOGICAL DEVICES TOP WINDOW ID
       ADDRESS OF:
                  RETURN CODE

     OUTPUTS:
       RCODE  - RETURN CODE


  DESCRIPTION
     THIS MODULE CLOSE LOGICAL DEVICE. IF LOGICAL DEVICE NOT
                  OPNENED WILL
     RETURN NFPDSTRC OR CURFPDST ERRORS.

ARGUMENTS:
----------
  LDWNID =       INT *
  RCODE =        CHAR []


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INCLUDE FILES:
-----------------
    STDTYP      - STANDARD TYPE DEFINITIONS
    FPD         - FORM PROCESSOR DATA
    FPCODE      - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
-----------------
    FNFPWN      - FIND FORM PROCESSOR WINDOW
    RMVFPD      - REMOVE FORM PROCESSOR DATA STRUCTURE
    MEMCPY


CALLED DIRECTLY BY:
--------------------
    CALLFP      - CALL FP ROUTINES


USED IN MAIN PROGRAM(S):
--------------------------
    MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation

```
NAME:               CMPFLD
PURPOSE:            COMPUTE FIELD
LANGUAGE:           C
MODULE TYPE:        FUNCTION
FUNCTION TYPE:      CHAR * ()
SOURCE FILE:        CMPFLD
SOURCE FILE TYPE:   .C
HOST:
SUBSYSTEM:          UI
SUBDIRECTORY:       FP
DOCUMENTATION GROUP: FORMPROC
```

DESCRIPTION:
------------

  SYNOPSIS
     STATIC CHAR *CMPFLD(DP)
        FIELD *DP;

     INPUTS:
        DP - POINTER TO FIELD TO BE COMPUTED

     OUTPUTS:
        RETURNS NULL OR ERROR CODE

  DESCRIPTION
     COMPUTES THE CURRENT VALUE OF A CALCULATED FIELD.

ARGUMENTS:
----------

  DP =        FIELD *


INCLUDE FILES:
--------------

    STDTYP      - STANDARD TYPE DEFINITIONS
    CTYPE       - **** PURPOSE NOT FOUND BY STRIPPER ****
    TIME        - **** PURPOSE NOT FOUND BY STRIPPER ****
    FPD         - FORM PROCESSOR DATA
    FPCODE      - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:

------------------

     CMPFLD/EVAL - EVALUATE FIELD EXPRESSION
     STRLEN
     BLEN
     CANITM       - CANONICALIZE ITEM
     MEMCPY
     SYSMSG       - SYSTEM MESSAGE ROUTINE
     FREE
     MEMSET
     CBPTR


CALLED DIRECTLY BY:
------------------

     OISCR/CMPALL - COMPUTE ALL CALCULATED FIELDS
     RSVEXP       - RESOLVE EXPRESSIONS


USED IN MAIN PROGRAM(S):
-------------------------

     MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                    CMPFLD/EVAL
PURPOSE:                 EVALUATE FIELD EXPRESSION
LANGUAGE:                C
MODULE TYPE:             FUNCTION
FUNCTION TYPE:           CHAR * ( )
SOURCE FILE:             CMPFLD
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC


DESCRIPTION:
------------

  SYNOPSIS
     STATIC CHAR *EVAL(EP, RP)
         ENODE *EP;
         EXPVAL *RP;

     INPUTS:
         EP - POINTER TO EXPRESSSION TO EVALUATE

     OUTPUTS:
         RP - POINTER TO RETURNED RESULT
         RETURNS NULL OR ERROR CODE

  DESCRIPTION
     EVALUATES THE SPECIFIED FIELD EXPRESSION.

ARGUMENTS:
----------

  EP =          ENODE *
  RP =          EXPVAL *


INCLUDE FILES:
--------------

  STDTYP       - STANDARD TYPE DEFINITIONS
  CTYPE        - **** PURPOSE NOT FOUND BY STRIPPER ****
  TIME         - **** PURPOSE NOT FOUND BY STRIPPER ****
  FPD          - FORM PROCESSOR DATA
  FPCODE       - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:
- - - - - - - - - - - - - - - -
  FREE
  ISDIGIT
  CMPFLD/EVAL  - EVALUATE FIELD EXPRESSION
  MEMCPY
  SPRINTF
  STRLEN
  CBPTR
  ESCPY        - EXTERNAL STRING COPY
  MALLOC
  BLEN
  SYSMSG       - SYSTEM MESSAGE ROUTINE


CALLED DIRECTLY BY:
- - - - - - - - - - - - - - - - - - -
  CMPFLD/EVA - EVALUATE FIELD EXPRESSION
  CMPFLD     - COMPUTE FIELD


USED IN MAIN PROGRAM(S):
- - - - - - - - - - - - - - - - - - - - - - - -
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                    COPFLD
PURPOSE:                 COPY FIELD
LANGUAGE:                C
MODULE TYPE:             FUNCTION
FUNCTION TYPE:           CHAR * ()
SOURCE FILE:             COPFLD
SOURCE FILE TYPE.        .C
HOST.
SUBSYSTEM                UI
SUBDIRECTORY             FP
DOCUMENTATION GROUP      FORMPROC


DESCRIPTION
- - - - -   - - - -


  SYNOPSIS
      CHAR *COPFLD(DP, PAR DP, ROW, COL, LNK_RDP, LNK_LDP)
          FIELD   *PAR DP;
          FIELD   *DP;
          INT     ROW, COL;
          FIELD   **LNK RDP, **LNK LDP;

    INPUTS
        NEW DP   - POINTER TO FIELD TO BE COPIED (IN OPEN LIST)
        PAR DP     POINTER TO PARENT OF NEWLY CREATED COPY
        ROW      - ROW WITHIN PARENT
        COL      - COLUMN WITHIN PARENT
        LNK RDP    POINTER TO BE SET TO POINT TO NEWLY CREATED
                     COPY
                   RIGHT POINTER
        LNK LDP    POINTER TO BE SET TO POINT TO NEWLY CREATED
                     COPY
                   LEFT POINTER


    OUTPUTS
        ERROR CODE IS RETURNED IF ONE OCCURED ELSE A NULL IS
                   RETURNED


  DESCRIPTION
      COPFLD COPIES A FORM FIELD AND ALL SUB FIELDS.  THE COPY
                 IS ALWAYS FROM
      THE OPEN LIST   A CHAIN OF FORWARD POINTERS IS KEPT TO
                 LINK

THE ACTIVE COPIES OF THE FORM, AS WELL AS A CHAIN OF
BACKWARD
POINTERS.   SINCE DEFAULT FORM VALUES ARE MAINTAINED IN
THE OPEN
LIST, THE COPIED FORM HAS DEFAULT VALUES IN THE FIELDS.

ARGUMENTS:
----------

```
  DP =        FIELD *
  PAR DP =       FIELD *
  LNK RDP =        FIELD **
  LNK LDP =        FIELD **
```

INCLUDE FILES:
--------------

```
  STDTYP      - STANDARD TYPE DEFINITIONS
  FPD         - FORM PROCESSOR DATA
  FPCODE      - FORM PROCESSOR RETURN CODES
  BITS        - INCLUDE FILE FOR BIT MANIPULATION ROUTINES
```

ROUTINES CALLED:
----------------

```
  COPFLD/CPYFLD - INTERNAL COPY FIELD
  RSVATT       - RESOLVE ATTRIBUTE
```

CALLED DIRECTLY BY:
-------------------

```
  ADDELM       - ADD ELEMENT
  COPFRM         COPY FORM
  OPNFRM PFR     PROCESS FORM
```

USED IN MAIN PROGRAM(S)
-----------------------

```
  MONITR MAI   MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation

| | |
|---|---|
| NAME: | COPFLD/CPYFLD |
| PURPOSE: | INTERNAL COPY FIELD |
| LANGUAGE: | C |
| MODULE TYPE: | FUNCTION |
| FUNCTION TYPE: | CHAR * ( ) |
| SOURCE FILE: | COPFLD |
| SOURCE FILE TYPE: | .C |
| HOST: | |
| SUBSYSTEM: | UI |
| SUBDIRECTORY: | FP |
| DOCUMENTATION GROUP: | FORMPROC |

DESCRIPTION:
------------

  DESCRIPTION
      RECURSIVE ROUTINE CALLED TO COPY A FIELD AND ALL ITS
                        SUBFIELDS

ARGUMENTS:
----------

  DP =        FIELD *
  PAR_DP =        FIELD *
  LNK RDP =        FIELD **
  LNK LDP =        FIELD **


INCLUDE FILES:
--------------

  STDTYP      -  STANDARD TYPE DEFINITIONS
  FPD         -  FORM PROCESSOR DATA
  FPCODE      -  FORM PROCESSOR RETURN CODES
  BITS        -  INCLUDE FILE FOR BIT MANIPULATION ROUTINES


ROUTINES CALLED:
----------------

  CBIT
  ABS
  COPFLD CPYFLD - INTERNAL COPY FIELD
  SBIT
  FFBCA
  PBPTR
  CBPTR

```
MEMCPY
FREE
BLEN
STRASN
SYSMSG      - SYSTEM MESSAGE ROUTINE
MALLOC
```

CALLED DIRECTLY BY:
--------------------
```
  COPFLD/CPYFLD - INTERNAL COPY FIELD
  COPFLD       - COPY FIELD
```

USED IN MAIN PROGRAM(S):
-------------------------
```
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation


NAME:                  COPFRM
PURPOSE:               COPY FORM
LANGUAGE:              C
MODULE TYPE:           FUNCTION
FUNCTION TYPE:         CHAR * ()
SOURCE FILE:           COPFRM
SOURCE FILE TYPE:      .C
HOST:
SUBSYSTEM:             UI
SUBDIRECTORY:          FP
DOCUMENTATION GROUP:   FORMPROC


DESCRIPTION:
------------

  SYNOPSIS
     CHAR *COPFRM(EFNAME, PARPTR, NXTPTR, PRVPTR)
        ENAME EFNAME;
        FIELD *PARPTR, **NXTPTR, **PRVPTR;

  DESCRIPTION
     COPIES A FORM FROM THE OPEN LIST TO THE DISPLAY LIST AND
                    PERFORMS THE
     NECESSARY CLEANUP (E.G. ASSIGNING WINDOW IDS, CALCULATING
                    FIELDS, ETC.).

ARGUMENTS:
----------

  EFNAME =        ENAME
  PARPTR =        FIELD *
  NXTPTR =        FIELD **
  PRVPTR =        FIELD **


INCLUDE FILES:
--------------

  STDTYP      - STANDARD TYPE DEFINITIONS
  FPD         - FORM PROCESSOR DATA
  FPCODE      - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
----------------


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```
ESCPY        - EXTERNAL STRING COPY
STRUPC
GOFPTR       - GET OPEN FROM POINTER
SYSMSG       - SYSTEM MESSAGE ROUTINE
COPFLD       - COPY FIELD
MAX
RSVEXP       - RESOLVE EXPRESSIONS
OPNFRM       - OPEN FORM
```

CALLED DIRECTLY BY:
--------------------

```
ADDFRM       - ADD FORM TO WINDOW
RPLFRM       - REPLACE FORM
STUPFP       - SET UP FORM PROCESSOR DATA STRUCTURES
```

USED IN MAIN PROGRAM(S):
------------------------

```
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation


NAME:                   CURPOS
PURPOSE:                GET CURSOR POSITION
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          FIELD * ()
SOURCE FILE:            CURPOS
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC


DESCRIPTION:
------------

  SYNOPSIS
     FIELD *CURPOS()

     OUTPUTS:
        RETURNS A POINTER TO THE FIELD CONTAINING THE CURSOR.

  DESCRIPTION
     RETURNS A POINTER TO THE SMALLEST FIELD CONTAINING THE
                         CURSOR WITH THE
     EXCEPTION OF TRANSPARENT FIELDS.


INCLUDE FILES:
--------------
  STDTYP       - STANDARD TYPE DEFINITIONS
  FPD          - FORM PROCESSOR DATA


ROUTINES CALLED:
----------------
  CURPOS/FNDCP - FIND CURSOR POSITION


CALLED DIRECTLY BY:
-------------------
  GETCUR       - GET CURSOR POSITION

USED IN MAIN PROGRAM(S):
-------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                      CURPOS/FNDCP
PURPOSE:                   FIND CURSOR POSITION
LANGUAGE:                  C
MODULE TYPE:               FUNCTION
FUNCTION TYPE:             FIELD * ()
SOURCE FILE:               CURPOS
SOURCE FILE TYPE:          .C
HOST:
SUBSYSTEM:                 UI
SUBDIRECTORY:              FP
DOCUMENTATION GROUP:       FORMPROC


DESCRIPTION:
------------
    DESCRIPTION
        RETURNS A POINTER TO THE SMALLEST FIELD WHICH ENCLOSES
                        THE CURSOR.
        A FORM OR A WINDOW MUST BE NONTRANSPARENT TO BE
                        CONSIDERED.


ARGUMENTS:
----------
    FLDPTR =        FIELD *


INCLUDE FILES:
--------------
    STDTYP       - STANDARD TYPE DEFINITIONS
    FPD          - FORM PROCESSOR DATA


ROUTINES CALLED:
----------------
    ABS
    CURPOS/FNDCP - FIND CURSOR POSITION
    ACRPOS       - ABSOLUTIZE CURSOR POSITION OF FIELD


CALLED DIRECTLY BY:
-------------------
    CURPOS/FNDCP - FIND CURSOR POSITION
    CURPOS       - GET CURSOR POSITION

USED IN MAIN PROGRAM(S):
-----------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                    DBCFNC
PURPOSE:                 CHECK FUNCTION
LANGUAGE:                VAX-11 COBOL
MODULE TYPE:             SUBROUTINE
SOURCE FILE:             DBCFNC
SOURCE FILE TYPE:        .COB
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            UIS
DOCUMENTATION GROUP:     FORMPROC


DESCRIPTION:
------------

   THIS MODULE CHECKS A FUNCTION TO SEE IF IT IS
   A VALID UIMS OR REMOTE APPLICATION.



ARGUMENTS:
----------
   CURSOR = RECRD
   ROLE = DSPLY [X(10)]
   FUNCTION = DSPLY [X(10)]
   TYP = DSPLY [X]
   RCODE = DSPLY [X(5)]


INCLUDE FILES:
--------------
   ORACLE      - data delcarations for programs that access
                          ORACLE
   ORCODE      - ORacle CODEs
   CICODE      - Command Interpreter CODEs
   FPCODE      - FORM PROCESSOR RETURN CODES
   CURSORI     - CURSOR description


ROUTINES CALLED:
----------------
   OSQL3
   OBIND
   OEXEC


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ODFINN
OFETCH

CALLED DIRECTLY BY:
--------------------
  UIS/STRTAP - START APPLICATION

USED IN MAIN PROGRAM(S):
--------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                  DBCROL
PURPOSE:               CHECK ROLE
LANGUAGE:              VAX-11 COBOL
MODULE TYPE:           SUBROUTINE
SOURCE FILE:           DBCROL
SOURCE FILE TYPE:      .COB
HOST:
SUBSYSTEM:             UI
SUBDIRECTORY:          UIS
DOCUMENTATION GROUP:   FORMPROC


DESCRIPTION:
- - - - - - - - - - - - -


   THIS MODULE CHECKS A ROLE TO SEE IF IT IS
   VALID FOR A USER ID.


ARGUMENTS:
- - - - - - - - - -

   CURSOR = RECRD
   USERID = DSPLY [X(10)]
   ROLE = DSPLY [X(10)]
   RCODE = DSPLY [X(5)]


INCLUDE FILES:
- - - - - - - - - - - - - - -

   ORACLE       - data delcarations for programs that access
                         ORACLE
   ORCODE       - ORacle CODEs
   CICODE       - Command Interpreter CODEs
   FPCODE       - FORM PROCESSOR RETURN CODES
   CURSORI      - CURSOR description


ROUTINES CALLED:
- - - - - - - - - - - - - - - -

   OSQL3
   OBIND
   OEXEC
   ODFINN
   OFETCH

CALLED DIRECTLY BY:
--------------------
  UIS       - USR INTERFACE SERVICES


USED IN MAIN PROGRAM(S):
---------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation

NAME                   DELFLD
PURPOSE                DELETE FIELD
LANGUAGE               C
MODULE TYPE            FUNCTION
FUNCTION TYPE          CHAR * ( )
SOURCE FILE            DELFLD
SOURCE FILE TYPE       C
HOST
SUBSYSTEM              UI
SUBDIRECTORY           FP
DOCUMENTATION GROUP    FORMPROC


DESCRIPTION
- - - - - - - - - - - -


  SYNOPSIS
     CHAR *DELFLD(DP, PDP)
        FIELD *DP, **PDP;


     INPUTS:
        DP - POINTER TO FIELD TO BE DELETED
        PDP- POINTER TO POINTER TO THE TOP LEVEL OF THIS LIST


     OUTPUTS:
        RETURNS AN ERROR CODE OR NULL (NO ERROR CAN OCCUR
                        UNLESS DELETING FROM
        THE OPEN LIST)


  DESCRIPTION
     DELETES A FIELD FROM THE OPEN LIST OR THE DISPLAY LIST BY
                        FIXING UP ALL
     THE PERTINENT POINTERS AND FREEING THE


ARGUMENTS:
- - - - - - - - - -

   DP =        FIELD *.
   PDP =       FIELD **


INCLUDE FILES:
- - - - - - - - - - - - -

   STDTYP      - STANDARD TYPE DEFINITIONS
   FPD         - FORM PROCESSOR DATA

FPCODE  FORM PROCESSOR RETURN CODES
BITS  INCLUDE FILE FOR BIT MANIPULATION ROUTINES


ROUTINES CALLED

SYSMSG  SYSTEM MESSAGE ROUTINE
DELFLD  DELETE FIELD
FREE
DELFLD DELEXP DELETE EXPRESSION
CBIT


CALLED DIRECTLY BY

CLSFRM  CLOSE FORM
DELFLD  DELETE FIELD
OPNFRM  OPEN FORM
RMVFPD  REMOVE FORM PROCESSOR DATA STRUCTURE
RMVPAG  REMOVE PAGE
RPLFRM - REPLACE FORM


USED IN MAIN PROGRAM(S)

MONITR MAI MAIN MODULE FOR MONITOR UIS FP PROCESS

FORM PROCESSOR Module Documentation


```
NAME                  DELFLD/DELEXP
PURPOSE               DELETE EXPRESSION
LANGUAGE              C
MODULE TYPE           SUBROUTINE
FUNCTION TYPE         VOID ()
SOURCE FILE           DELFLD
SOURCE FILE TYPE      .C
HOST
SUBSYSTEM             UI
SUBDIRECTORY          FP
DOCUMENTATION GROUP   FORMPROC
```

DESCRIPTION
- - - - - - - - - - - - -

   SYNOPSIS
      STATIC VOID DELEXP(EP)
         ENODE *EP;

      INPUTS
         EP - POINTER TO EXPRESSION TO DELETE

   DESCRIPTION
      FREES THE SPECIFIED EXPRESSION TREE.

ARGUMENTS

   EP =          ENODE *


INCLUDE FILES
- - - - - - - - - - - - - - - -

   STDTYP       - STANDARD TYPE DEFINITIONS
   FPD          - FORM PROCESSOR DATA
   FPCODE       - FORM PROCESSOR RETURN CODES
   BITS         - INCLUDE FILE FOR BIT MANIPULATION ROUTINES


ROUTINES CALLED
- - - - - - - - - - - -

   DELFLD DELEXP - DELETE EXPRESSION
   FREE

CALLED DIRECTLY BY:
-------------------

  DELFLD/DELEXP - DELETE EXPRESSION
  DELFLD     - DELETE FIELD


USED IN MAIN PROGRAM(S):
------------------------

  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                    ESCPY
PURPOSE:                 EXTERNAL STRING COPY
LANGUAGE:                C
MODULE TYPE:             SUBROUTINE
FUNCTION TYPE:           VOID ()
SOURCE FILE:             ESCPY
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC


DESCRIPTION:
------------

   SYNOPSIS
      VOID ESCPY(TO, FROM, LEN)
         CHAR TO[];
         CHAR FROM[];
         INT  LEN;

      INPUTS:
         FROM[] - STRING TO COPY FROM
         LEN    - MAXIMUM NUMBER OF CHARACTERS TO COPY

      OUTPUTS:
         TO - STRING TO COPY INTO

   DESCRIPTION
      ESCPY COPIES "LEN" CHARACTERS FROM "FROM" TO "TO" AND
                        THEN REMOVES ANY
      TRAILING BLANKS FROM "TO".

ARGUMENTS:
----------

   TO =        CHAR []
   FROM =      CHAR []
   LEN =       INT


INCLUDE FILES:
--------------

   STDTYP      - STANDARD TYPE DEFINITIONS

ROUTINES CALLED:
-----------------
   STRNCPY


CALLED DIRECTLY BY:
-------------------
   ADDELM      - ADD ELEMENT
   ADDFRM      - ADD FORM TO WINDOW
   CLSFRM      - CLOSE FORM
   CMPFLD/EVA  - EVALUATE FIELD EXPRESSION
   COPFRM      - COPY FORM
   GDATA       - GET DATA
   GDATLN      - GET DATA LENGTH
   GETATT      - GET ATTRIBUTE
   GETBAK      - GET BACKGROUND ATTRIBUTE
   GPAGE       - GET PAGE
   GWINDO      - GET WINDOW
   MAKAP       - MAKE APLICATION STRUTURE
   MAKPD       - MAKE PHYSICAL DEVICE STRUCTURE
   MONITR/GETPD - GET PHYSICAL DEVICE
   MONITR/MAI  - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
   ONWISC      - OUTPUT (NO WAIT) / INPUT SCREEN
   OPNFRM/PFREC - PROCESS FORM RECORD
   OPNFRM/PDREC - PROCESS FIELD RECORD
   OPNFRM/PIT  - PROCESS ITEM
   OPNFRM/PWI  - PROCESS WINDOW
   OPNFRM      - OPEN FORM
   PARFQN      - PARSE FULLY QUALIFIED NAME
   PDATA       - PUT FORM DATA
   PMSGLS      - PUT MESSAGE LINE STRING
   PUTATT      - PUT ATTRIBUTES
   PUTBAK      - PUT  BACKGROUND ATTRIBUTES
   PUTCUR      - PUT CURSOR
   PUTLOC      - PUT LOCATION
   RMVPAG      - REMOVE PAGE
   RPLFRM      - REPLACE FORM
   SFPDAP      - SET FORM PROCESSOR DATA STRUCTURE FOR APLICATION
   UIS/STRTAP  - START APPLICATION
   UIS/STRTPD  - START PHYSICAL DEVICE
   UIS/FLWNST  - FILL WINDOW MANAGER STRUCTURE
   UIS/PRCINP  - PRCESS INPUT
   UIS         - USR INTERFACE SERVICES

USED IN MAIN PROGRAM(S):
--------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                FNDFLD
PURPOSE:             FIND FIELD
LANGUAGE:            C
MODULE TYPE:         FUNCTION
FUNCTION TYPE:       FIELD * ()
SOURCE FILE:         FNDFLD
SOURCE FILE TYPE:    .C
HOST:
SUBSYSTEM:           UI
SUBDIRECTORY:        FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:
-------------

  SYNOPSIS
    FIELD *FNDFLD(NAME, DP)
        NAME   NAME;
        FIELD *DP;

      INPUTS:
        NAME - NAME OF THE FIELD TO FIND
        DP - POINTER TO FORM TO LOOK FOR FIELD

      OUTPUTS:
        RETURNS POINTER TO FIELD

  DESCRIPTION
    GIVEN THE NAME OF A FIELD AND THE FORM IT IS ON FNDFLD
                      RETURNS A
    POINTER TO THE FIELD.

ARGUMENTS:
-----------
  NAME =        NAME
  DP =          FIELD *


INCLUDE FILES:
---------------
  STDTYP       - STANDARD TYPE DEFINITIONS
  FPD          - FORM PROCESSOR DATA

ROUTINES CALLED:
------------------
  STRCMP


CALLED DIRECTLY BY:
--------------------
  OPNFRM/BRPNOD - BUILD RELATIVE POSITION NODE


USED IN MAIN PROGRAM(S):
--------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                    FNDMSG
PURPOSE:                 FIND MESSAGE
LANGUAGE:                C
MODULE TYPE:             SUBROUTINE
FUNCTION TYPE:           VOID ()
SOURCE FILE:             FNDMSG
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
     VOID FNDMSG(CODEP, MSGSTR)
        CHAR *CODEP;
        MSG  MSGSTR;

     INPUTS:
        CODEP - RETURN CODE TO FIND MESSAGE FOR

     OUTPUTS:
        MSGSTR - MESSAGE CORRESPONDING TO CODEP

  DESCRIPTION
     FIND THE MESSAGE STRING THAT CORRESPONDS TO THE CODE.

ARGUMENTS:
-----------

  CODEP =        CHAR *
  MSGSTR =       MSG


INCLUDE FILES:
--------------

  STDTYP     - STANDARD TYPE DEFINITIONS
  STDIO      - **** PURPOSE NOT FOUND BY STRIPPER ****
  FPD        - FORM PROCESSOR DATA
  FPCODE     - FORM PROCESSOR RETURN CODES
  FPEMSG     - FORM PROCESSOR ERROR MESSAGES

ROUTINES CALLED:
-----------------
  STRNCMP
  FNDMSG/OUMSGF - OPEN USER MESSAGE FILE
  FNDMSG/CODSCH - CODE SEARCH
  SPRINTF
  STRLEN
  MEMSET


CALLED DIRECTLY BY:
--------------------
  PMSGLC       - PUT MESSAGE LINE CODE
  SYSMSG       - SYSTEM MESSAGE ROUTINE


USED IN MAIN PROGRAM(S):
--------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                   FNDMSG/CODSCH
PURPOSE:                CODE SEARCH
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          INT ()
SOURCE FILE:            FNDMSG
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC


DESCRIPTION:
-------------


ARGUMENTS:
-----------

  CODEP =        CHAR *
  FP =           FILE *
  MSGSTR =       CHAR *


INCLUDE FILES:
---------------

  STDTYP       - STANDARD TYPE DEFINITIONS
  STDIO        - **** PURPOSE NOT FOUND BY STRIPPER ****
  FPD          - FORM PROCESSOR DATA
  FPCODE       - FORM PROCESSOR RETURN CODES
  FPEMSG       - FORM PROCESSOR ERROR MESSAGES


ROUTINES CALLED:
-----------------

  MEMCPY
  MEMCMP
  FREAD
  REWIND


CALLED DIRECTLY BY:
--------------------
  FNDMSG       - FIND MESSAGE


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USED IN MAIN PROGRAM(S):
------------------------------

  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                   FNDMSG/OUMSGF
PURPOSE:                OPEN USER MESSAGE FILE
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          CHAR * ()
SOURCE FILE:            FNDMSG
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC

DESCRIPTION:
- - - - - - - - - - -

   SYNOPSIS
      STATIC CHAR *OUMSGF(CODEP)
         CHAR    CODEP[];
      INPUTS:
         CODEP - RETURN CODE TO OPEN MESSAGE FILE FOR

   DESCRIPTION
      OUMSGF OPENS THE MESSAGE FILE CORRESPONDING TO THE
                    SPECIFIED RETURN CODE.

ARGUMENTS:
- - - - - - - - -

   CODEP =      CHAR []


INCLUDE FILES:
- - - - - - - - - - -

   STDTYP       - STANDARD TYPE DEFINITIONS
   STDIO        - **** PURPOSE NOT FOUND BY STRIPPER ****
   FPD          FORM PROCESSOR DATA
   FPCODE       - FORM PROCESSOR RETURN CODES
   FPEMSG       - FORM PROCESSOR ERROR MESSAGES


ROUTINES CALLED:
- - - - - - - - - - - - -

   MEMCPY
   FOPEN
   SPRINTF

CALLED DIRECTLY BY:
--------------------

  FNDMSG      - FIND MESSAGE


USED IN MAIN PROGRAM(S):
--------------------------

  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                    FNFPWN
PURPOSE                  FIND FORM PROCESSOR WINDOW
LANGUAGE:                C
MODULE TYPE:             FUNCTION
FUNCTION TYPE:           FIELD * ()
SOURCE FILE:             FNFPWN
SOURCE FILE TYPE         .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC


DESCRIPTION:
------------

   SYNOPSIS
      FIELD *FNFPWN(FLDPT, WNDID)
         FIELD *FLDPT,
         INT    WNDID;

      INPUTS:
         FLDPT - POINTER TO FIRST WNDOW IN LIST TO BE SEARCHED
         WNDID - ID OF WINDOW SEARCHING FOR

      OUTPUTS:
         RETURNS A POINTER TO WINDOW FOUND OR A NULL

   DESCRIPTION
         THIS MODULE SEARCHES FOR A WNDOW WITH THE ID GIVEN AND
                         EITHER RETURNS
         A POINTER TO THE WINDOW FOUND OR A NULL.

ARGUMENTS:
----------

   FLDPT =         FIELD *
   WNDID =         INT


INCLUDE FILES:
--------------

   STDTYP       - STANDARD TYPE DEFINITIONS
   FPD          - FORM PROCESSOR DATA

ROUTINES CALLED:
------------------

   FNFPWN          - FIND FORM PROCESSOR WINDOW


CALLED DIRECTLY BY:
----------------------

   CLSLDV          - CLOSE LOGICAL DEVICE
   FNFPWN          - FIND FORM PROCESSOR WINDOW
   GDVINP          - GET DEVICE INPUT
   OISCR/EVTBUF - EMPTY VTI BUFFER
   UIS/PRCINP  - PRCESS INPUT


USED IN MAIN PROGRAM(S):
----------------------------

   MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                   FUISWN
PURPOSE:                FIND UIS WINDOW
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          FPD * ()
SOURCE FILE:            FUISWN
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC


DESCRIPTION:
------------


  SYNOPSIS
     FPD *FUISWN(PDPTR)
       PD *PDPTR;


     INPUTS/OUTPUTS:


     INPUTS:
        PDPTR - POINTER TO PHISICAL DEVICE ON WHICH TO LOOK FOR
                    UIS WINDOW

     OUTPUTS:
        RETURNS A POINTER TO UIS LOG DEV IF FOUND UIS OTHEWISE
                    RETURNS NULL

  DESCRIPTION
     THIS MODULE SEARCES FOR UIS WINDOW ON SPECIFIED PHYSICAL
                    DEVICE.
     IT RETURNS EITHER A POINTER TO THE UIS LOG DEV (IF FOUND)
                    OR A NULL
     POINTER.

ARGUMENTS:
----------

  PDPTR =           PD *

INCLUDE FILES:
---------------

STDTYP    - STANDARD TYPE DEFINITIONS
FPD       - FORM PROCESSOR DATA


CALLED DIRECTLY BY:
-------------------

INSCR     - INPUT SCREEN
PMSGLS    - PUT MESSAGE LINE STRING


USED IN MAIN PROGRAM(S):
------------------------

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation

NAME:                    GARPOS
PURPOSE:                 GET ARRAY OFFSET POSITION OF FIELD
LANGUAGE:                C
MODULE TYPE:             SUBROUTINE
FUNCTION TYPE:           VOID ()
SOURCE FILE:             GARPOS
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
------------

   SYNOPSIS
      VOID GARPOS(DP, PARPTR, ARYPOS)
         FIELD          *DP;
         FIELD          **PARPTR;
         POSITION       *ARYPOS;

      INPUTS/OUTPUTS:


      INPUTS:
         DP - FIELD WHOSE OFFSET ROW AND COL FROM FIRST ARRAY
                     DIMMENSION WANTED
         ADDRESS OF STURCTURE FOR RETURNING VALUES OF:
                                               OFFSET ROW
                                               OFFSET COL
      OUTPUTS:
         ARYPTR -  FIRST ARRAY DIMMENSION INTERESTED IN
         STRUCTURE CONTAINING:
                               OFFSET ROW OF FIELD
                               OFFSET COL OF FIELD

   DESCRIPTION
      THIS MODULE OBTAINS A THE OFFSET ROW AND COL OF A FIELD
                     FROM FIRST
      DIMMENSION OF AN ARRAY BY GOING BACK UP CHILD PARENT TREE
                     AND ADDING
      EACH SUCCESSIVE PARENT'S ROW AND COL TO SUM OF CHILDS'
                     FOR ALL

DIMMENSIONS OF THE ARRAY.

ARGUMENTS:
----------
  DP =       FIELD *
  PARPTR =      FIELD **
  ARYPOS =      POSITION *


INCLUDE FILES:
--------------
  STDTYP       - STANDARD TYPE DEFINITIONS
  FPD          - FORM PROCESSOR DATA

FORM PROCESSOR Module Documentation


NAME:                   GATDEF
PURPOSE:                GET ATTRIBUTE DEFINITION
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          CHAR * ()
SOURCE FILE:            GATDEF
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC


DESCRIPTION:
------------

   SYNOPSIS
       CHAR *GATDEF(ATNAME, ADP)
          NAME    ATNAME;
          ATTMAP **ADP;

      INPUTS:
          ATNAME - NAME OF ATRIBUTE

      OUTPUTS:
          ADP -   POINTER TO ATTRIBUTE MAP OF AN ATTRIBUTE NAME
                        AND
                  DEFINITION.
          RETURNS ERROR CODE OR NULL IF SUCCESSFUL.

   DESCRIPTION
          TRANSLATES ATTRIBUTE NAME INTO A BIT MAP OF AN ATTRIBUTE
          DEFINITION

ARGUMENTS:
----------
   ATNAME =         NAME
   ADP =        ATTMAP **


INCLUDE FILES:
---------------
   STDTYP      - STANDARD TYPE DEFINITIONS
   FPD         - FORM PROCESSOR DATA

FPCODE        - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
------------------
  STRUPC
  STRCMP
  SYSMSG        - SYSTEM MESSAGE ROUTINE


CALLED DIRECTLY BY:
--------------------
  ONWISC       - OUTPUT (NO WAIT) / INPUT SCREEN
  OPNFRM/PFREC - PROCESS FORM RECORD
  OPNFRM/PAR   - PROCESS ARRAY
  OPNFRM/PIT   - PROCESS ITEM
  OPNFRM/PWI   - PROCESS WINDOW
  PUTATT       - PUT ATTRIBUTES
  PUTBAK       - PUT  BACKGROUND ATTRIBUTES
  STUPFP       - SET UP FORM PROCESSOR DATA STRUCTURES


USED IN MAIN PROGRAM(S):
----------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                  GDATA
PURPOSE:               GET DATA
LANGUAGE:              C
MODULE TYPE:           FUNCTION
FUNCTION TYPE:         FORTRAN VOID ()
SOURCE FILE:           GDATA
SOURCE FILE TYPE:      .C
HOST:
SUBSYSTEM:             UI
SUBDIRECTORY:          FP
DOCUMENTATION GROUP:   FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
     FORTRAN VOID GDATA(INSTID, EWPATH, FDATA, CODEP)
        INT     *INSTID;
        EPATH   EWPATH;
        CHAR    *FDATA;
        CHAR    CODEP[];

     INPUTS:
        INSTID - INSTANCE ID (PREV OR CURRNT)
        EWPATH - PATH NAME

     OUTPUTS:
        FDATA - REQUESTED DATA
        CODEP - RETURN CODE

  DESCRIPTION
     GDATA IS USED TO GET USER ENTERED DATA. THE DATA CAN BE
     FROM A FORM, WINDOW, ARRAY, OR FIELD DEPENDING ON THE PATH
     (EWPATH).

ARGUMENTS:
----------
   INSTID =      INT *
   EWPATH =      EPATH
   FDATA =       CHAR *
   CODEP =       CHAR []

INCLUDE FILES:
--------------

    STDTYP     - STAN'ARD TYPE DEFINITIONS
    FPD        - FORM PROCESSOR DATA
    FPCODE     - FORM PROCESSOR RETURN CODES
    FPPARM     - FORM PROCESSOR PARAMETERS


ROUTINES CALLED:
----------------

    ESCPY      - EXTERNAL STRING COPY
    PTHPTR     - GET PATH POINTER
    GDATA/GETBUF - GET BUFFER
    SYSMSG     - SYSTEM MESSAGE ROUTINE
    MEMCPY


CALLED DIRECTLY BY:
-------------------

    CALLFP     - CALL FP ROUTINES
    UIS        - USR INTERFACE SERVICES


USED IN MAIN PROGRAM(S):
------------------------

    MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation

NAME:                  GDATA/GETBUF
PURPOSE:               GET BUFFER
LANGUAGE:              C
MODULE TYPE:           SUBROUTINE
FUNCTION TYPE:         VOID ()
SOURCE FILE:           GDATA
SOURCE FILE TYPE:      .C
HOST:
SUBSYSTEM:             UI
SUBDIRECTORY:          FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:
-------------

  DESCRIPTION
      GETBUF PUTS THE CONTENTS OF ALL FIELDS CONTAINED IN THE
                        DATA AREA
      SPECIFIED BY 'DP' INTO THE BUFFER FDATA. IT CALLS ITSELF
                        TO GET
      THE CONTENTS OF SUBAREAS (FORMS, ITEMS, ETC.) WITHIN THE
                        SPECIFIED
      AREA.

ARGUMENTS:
-----------

  DP =        FIELD *


INCLUDE FILES:
---------------

  STDTYP     - STANDARD TYPE DEFINITIONS
  FPD        - FORM PROCESSOR DATA
  FPCODE     - FORM PROCESSOR RETURN CODES
  FPPARM     - FORM PROCESSOR PARAMETERS


ROUTINES CALLED:
-----------------

  GDATA/GETBUF - GET BUFFER
  BLEN
  CBPTR
  MEMCPY

CALLED DIRECTLY BY:
--------------------
  GDATA/GETBUF - GET BUFFER
  GDATA        - GET DATA


USED IN MAIN PROGRAM(S):
--------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                   GDATLN
PURPOSE:                GET DATA LENGTH
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          FORTRAN VOID ()
SOURCE FILE:            GDATLN
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC

DESCRIPTION:
------------

    SYNOPSIS
        FORTRAN VOID GDATLN(EWPATH, LEN, CODEP)
            EPATH   EWPATH;
            INT     *LEN;
            CHAR    CODEP[];

        INPUTS:
            EWPATH - PATH NAME

        OUTPUTS:
            LEN    - LENGTH OF DATA
            CODEP  - RETURN CODE

    DESCRIPTION
        GDATLN GETS THE LENGTH OF THE DATA CORRESPONDING TO THE
                        FORM, WINDOW,
        OR ARRAY SPECIFIED BY THE PATH.

ARGUMENTS:
-----------

    EWPATH =        EPATH
    LEN =       INT *
    CODEP =         CHAR []


INCLUDE FILES
---------------
    STDTYP      - STANDARD TYPE DEFINITIONS

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```
FPD        - FORM PROCESSOR DATA
FPCODE     - FORM PROCESSOR RETURN CODES
FPPARM     - FORM PROCESSOR PARAMETERS
```

ROUTINES CALLED:
-----------------
```
  ESCPY        - EXTERNAL STRING COPY
  PTHPTR       - GET PATH POINTER
  GDATLN/GBUFLN - GET BUFFER LENGTH
  MEMCPY
```

CALLED DIRECTLY BY:
-------------------
```
  CALLFP       - CALL FP ROUTINES
```

USED IN MAIN PROGRAM(S):
-------------------------
```
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation

NAME:                    GDATLN/GBUFLN
PURPOSE:                 GET BUFFER LENGTH
LANGUAGE:                C
MODULE TYPE:             FUNCTION
FUNCTION TYPE:           INT ()
SOURCE FILE:             GDATLN
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
-------------

  DESCRIPTION
     RETURNS THE LENGTH OF THE SPECIFIED BUFFER

ARGUMENTS:
-----------

  DP =        FIELD *


INCLUDE FILES:
---------------

   STDTYP       - STANDARD TYPE DEFINITIONS
   FPD          - FORM PROCESSOR DATA
   FPCODE       - FORM PROCESSOR RETURN CODES
   FPPARM       - FORM PROCESSOR PARAMETERS


ROUTINES CALLED:
------------------

   GDATLN/GBUFLN - GET BUFFER LENGTH
   BLEN


CALLED DIRECTLY BY:
--------------------

   GDATLN/GBUFLN - GET BUFFER LENGTH
   GDATLN        - GET DATA LENGTH


USED IN MAIN PROGRAM(S)

---

**MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS**

FORM PROCESSOR Module Documentation


NAME:                    GDVINP
PURPOSE:                 GET DEVICE INPUT
LANGUAGE:                C
MODULE TYPE:             FUNCTION
FUNCTION TYPE:           CHAR * ()
SOURCE FILE:             GDVINP
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
-------------

    SYNOPSIS
        CHAR *GDVINP(PDPTR, MSGBUF, LEN, APNAM, APCHAN)
            PD    *PDPTR;
            CHAR  **MSGBUF;
            INT   *LEN;
            NAME  APNAM;
            CHAN  APCHAN;

        INPUTS:
            PDPTR  - POINTER TO USER'S PHYSICAL DEVICE
            MSGBUF - CONTAINS DATA FROM DEVICE DRIVER
            LEN    - LENGTH OF MSGBUF

        OUTPUTS:
            APNAM  - NAME OF AP STRUCTURE WILL BE FOR - FROM NTM
            APCHAN - UNIQUE INSTANCE OF AP - FROM NTM
            RETURNS STANDARD RETURN CODE FOR FORM PROCESSOR

    DESCRIPTION
        THIS MODULE IS CALLED BY THE MONITOR TO SETUP THE FPD
                        STRUCTURE
        AND GET INPUT FROM THE DEVICE DRIVER RETURNING THE
                        APPLICATION NAME
        AND CHANNEL OF APPLICATION FOR WHICH THE DATA WAS FOR. IF
                        THE RCODE
        RETURNED IS INPNCMPL INPUT WAS NOT COMPLETED.

    ARGUMENTS:

```
----------
  PDPTR =        PD *
  MSGBUF =        CHAR **
  LEN =         INT *
  APNAM =        NAME
  APCHAN =        CHAN
```

INCLUDE FILES:
----------------

```
  STDTYP    - STANDARD TYPE DEFINITIONS
  STDIO     - **** PURPOSE NOT FOUND BY STRIPPER ****
  FPD       - FORM PROCESSOR DATA
  FPCODE    - FORM PROCESSOR RETURN CODES
  FUNCTS    - FUNCTION DEFINITIONS
  CTLCHR    - CONTROL CHARACTERS
```

ROUTINES CALLED:
----------------

```
  BLDCMD
  MEMSET
  PUTW
  FWRITE
  SYSMSG    - SYSTEM MESSAGE ROUTINE
  FNFPWN    - FIND FORM PROCESSOR WINDOW
  PDVOTP    - PUT DEVICE OUTPUT
  FTELL
  FCLOSE
  MEMCPY
  STRLEN
  INSCR     - INPUT SCREEN
  GVTICMD
```

CALLED DIRECTLY BY:
--------------------

```
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

USED IN MAIN PROGRAM(S):
------------------------

```
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation


NAME:                  GETATT
PURPOSE:               GET ATTRIBUTE
LANGUAGE:              C
MODULE TYPE:           FUNCTION
FUNCTION TYPE:         FORTRAN VOID ()
SOURCE FILE:           GETATT
SOURCE FILE TYPE:      .C
HOST:
SUBSYSTEM:             UI
SUBDIRECTORY:          FP
DOCUMENTATION GROUP:   FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
      FORTRAN VOID GETATT(EWPATH, DUR, ATTRBT, RCODE)
          EPATH    EWPATH;
          INT      *DUR;
          ENAME    ATTRBT;
          CHAR     RCODE[];

      INPUTS:
          EWPATH - QUALIFIED NAME OF FEILD OF WHICH CALLER
                       WISHES ATTRIBUTES
          DUR    - PERM/TEMP FLAG

      OUTPUTS:
          ATTRBT  - NAME OF ATTRIBUTE
          RCODE   - RETURN CODE

  DESCRIPTION
      GETATT GETS THE ATTRIBUTE IDENTIFIERS FOR ANY ITEM FIELD.

ARGUMENTS:
-----------

   EWPATH =        EPATH
   DUR    =     INT *
   ATTRBT =        ENAME
   RCODE  =     CHAR []


INCLUDE FILES:

```
--------------
  STDTYP      - STANDARD TYPE DEFINITIONS
  FPD         - FORM PROCESSOR DATA
  FPCODE      - FORM PROCESSOR RETURN CODES
  FPPARM      - FORM PROCESSOR PARAMETERS
```

ROUTINES CALLED:
```
------------------
  ESCPY       - EXTERNAL STRING COPY
  PTHPTR      - GET PATH POINTER
  SYSMSG      - SYSTEM MESSAGE ROUTINE
  MEMSET
  STRLEN
  MEMCPY
```

CALLED DIRECTLY BY:
```
---------------------
  CALLFP      - CALL FP ROUTINES
```

USED IN MAIN PROGRAM(S):
```
--------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation

NAME:                    GETBAK
PURPOSE:                 GET BACKGROUND ATTRIBUTE
LANGUAGE:                C
MODULE TYPE:             FUNCTION
FUNCTION TYPE:           FORTRAN VOID ()
SOURCE FILE:             GETBAK
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
------------

    SYNOPSIS
        FORTRAN VOID GETATT(EWPATH, DUR, ATTRBT, RCODE)
            EPATH   EWPATH;
            INT     *DUR;
            ENAME   ATTRBT;
            CHAR    RCODE[];

        INPUTS:
            EWPATH = QUALIFIED NAME OF FEILD OF WHICH CALLER
                        WISHES ATTRIBUTES
            DUR    = PERM/TEMP FLAG

        OUTPUTS:
            ATTRBT  = NAME OF ATTRIBUTE
            RCODE   = RETURN CODE

    DESCRIPTION
        GETBAK GETS THE ATTRIBUTE IDENTIFIERS FOR WINDOW AND FORMS.

ARGUMENTS:
-----------

    EWPATH =        EPATH
    DUR =       INT *
    ATTRBT =        ENAME
    RCODE =         CHAR []


INCLUDE FILES:

```
-------------
   STDTYP      - STANDARD TYPE DEFINITIONS
   FPD         - FORM PROCESSOR DATA
   FPCODE      - FORM PROCESSOR RETURN CODES
   FPPARM      - FORM PROCESSOR PARAMETERS
```

ROUTINES CALLED:
```
-----------------
   ESCPY       - EXTERNAL STRING COPY
   PTHPTR      - GET PATH POINTER
   SYSMSG      - SYSTEM MESSAGE ROUTINE
   MEMSET
   STRLEN
   MEMCPY
```

CALLED DIRECTLY BY:
```
-------------------
   CALLFP      - CALL FP ROUTINES
```

USED IN MAIN PROGRAM(S):
```
--------------------------
   MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation


NAME:                    GETCUR
PURPOSE:                 GET CURSOR POSITION
LANGUAGE:                C
MODULE TYPE:             FUNCTION
FUNCTION TYPE:           FORTRAN VOID ()
SOURCE FILE:             GETCUR
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
------------


  SYNOPSIS
    FORTRAN VOID GETCUR(FQ_NAM,TYPE, ROW, COL, RCODE)
        EPATH   FQ_NAM;
        CHAR    *TYPE;
        INT     *ROW;
        INT     *COL;
        CHAR    RCODE[];

    OUTPUTS:
  FQ_NAM =  FULLY QUALIFIED NAME OF FIELD IN WHICH CURSOR LIES
                  - INITIALIZED TO SPACES
            ARRAYS - DIMENSIONS IN WHICH CURSOR FOUND INCLUDED
                  WINDOWS - PAGE ON WHICH CURSOR FOUND INCLUDED
        TYPE   =  TYPE OF FIELD IN WHICH CURSOR FOUND
                  - INITIALIZED TO SPACES
  ROW      =  ROW WITHIN FIELD - INITIALIZED TO ABSOLUTE ROW ON
                  SCREEN
  COL      =  COL WITHIN FIELD - INITIALIZED TO ABSOLUTE COL ON
                  SCREEN
        RCODE  =  RETURNS ERROR IF FULLY QUALIFIED NAME TOO
                  LONG

DESCRIPTION

    THIS ROUTINE RETURNS THE FULLY QUALIFIED  NAME OF THE
                  FIELD  IN
    WHICH THE CURSOR IS FOUND [THE DIMENSIONS (IF ANY) OF
                  ARRAY IN WHICH

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IT LIES AS WELL AS PAGE NUMBER IS INCLUDED IN FULLY
QULIFIED NAME]
AND ROW AND COLUMN WITHIN THIS FIELD

ARGUMENTS:
----------

```
FQ_NAM =        EPATH
TYPE =          CHAR *
ROW =           INT *
COL =           INT *
RCODE =         CHAR [ ]
```

INCLUDE FILES:
--------------

```
STDTYP      - STANDARD TYPE DEFINITIONS
FPD         - FORM PROCESSOR DATA
FPCODE      - FORM PROCESSOR RETURN CODES
FPPARM      - FORM PROCESSOR PARAMETERS
```

ROUTINES CALLED:
----------------

```
MALLOC
SPRINTF
GETCUR/CONCAT - CONCATENATE STRING TO CURRENT NAME
ACRPOS      - ABSOLUTIZE CURSOR POSITION OF FIELD
MEMSET
FREE
SYSMSG      - SYSTEM MESSAGE ROUTINE
MEMCPY
CURPOS      - GET CURSOR POSITION
```

CALLED DIRECTLY BY:
-------------------

```
CALLFP      - CALL FP ROUTINES
```

USED IN MAIN PROGRAM(S):
------------------------

```
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation


NAME:                   GETCUR/CONCAT
PURPOSE:                CONCATENATE STRING TO CURRENT NAME
LANGUAGE:               C
MODULE TYPE:            SUBROUTINE
FUNCTION TYPE:          VOID ()
SOURCE FILE:            GETCUR
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC


DESCRIPTION:
------------


ARGUMENTS:
----------

   STR =        CHAR []


INCLUDE FILES:
--------------

   STDTYP       - STANDARD TYPE DEFINITIONS
   FPD          - FORM PROCESSOR DATA
   FPCODE       - FORM PROCESSOR RETURN CODES
   FPPARM       - FORM PROCESSOR PARAMETERS


ROUTINES CALLED:
----------------
   MEMCPY
   STRLEN


CALLED DIRECTLY BY:
-------------------
   GETCUR       - GET CURSOR POSITION


USED IN MAIN PROGRAM(S)
-----------------------
   MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


```
NAME:               GOFPTR
PURPOSE:            GET OPEN FROM POINTER
LANGUAGE:           C
MODULE TYPE:        FUNCTION
FUNCTION TYPE:      FIELD * ()
SOURCE FILE:        GOFPTR
SOURCE FILE TYPE:   .C
HOST:
SUBSYSTEM:          UI
SUBDIRECTORY:       FP
DOCUMENTATION GROUP: FORMPROC
```

DESCRIPTION:
-------------

```
  SYNOPSIS
     FIELD *GOFPTR(FNAME)
        NAME FNAME;

     INPUTS:
        FNAME - NAME OF FORM TO GET POINTER TO

     OUTPUTS:
        RETURNS POINTER TO FORM ON OPEN LIST

  DESCRIPTION
     RETURNS A POINTER TO THE SPECIFIED FORM ON THE OPEN LIST
                    OR NULL IF
     NOT FOUND.
```

ARGUMENTS:
-----------

```
  FNAME =       NAME
```


INCLUDE FILES:
---------------

```
  STDTYP    -  STANDARD TYPE DEFINITIONS
  FPD       -  FORM PROCESSOR DATA
```


ROUTINES CALLED:
-----------------

STRCMP


CALLED DIRECTLY BY:
----------------------

   ADDELM      - ADD ELEMENT
   CLSFRM      - CLOSE FORM
   COPFRM      - COPY FORM
   OPNFRM/PFR - PROCESS FORM
   OPNFRM      - OPEN FORM


USED IN MAIN PROGRAM(S):
----------------------------

   MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                 GPAGE
PURPOSE:              GET PAGE
LANGUAGE:             C
MODULE TYPE:          FUNCTION
FUNCTION TYPE:        FORTRAN VOID ()
SOURCE FILE:          GPAGE
SOURCE FILE TYPE:     .C
HOST:
SUBSYSTEM:            UI
SUBDIRECTORY:         FP
DOCUMENTATION GROUP:  FORMPROC


DESCRIPTION:
- - - - - - - - - - - -

   SYNOPSIS
      FORTRAN VOID GPAGE(EWPATH, PNUMP, EFNAME, CODEP)
          EPATH    EWPATH;
          INT      *PNUMP;
          ENAME    *EFNAME;
          CHAR     CODEP[];

       INPUTS:
          EWPATH - PATH NAME OF WINDOW
          PNUMP  - PAGE NUMBER IN WINDOW

       OUTPUTS:
          EFNAME - FORM NAME
          CODEP  - RETURN CODE

   DESCRIPTION
      RETURNS THE NAME OF THE FORM ON THE SPECIFIED PAGE IN THE
                      WINDOW.

ARGUMENTS:
- - - - - - - - - -
   EWPATH =       EPATH
   PNUMP =        INT *
   EFNAME =       ENAME
   CODEP =        CHAR []


INCLUDE FILES:

```
------------------
 STDTYP       - STANDARD TYPE DEFINITIONS
 FPD          - FORM PROCESSOR DATA
 FPCODE       - FORM PROCESSOR RETURN CODES
 FPPARM       - FORM PROCESSOR PARAMETERS
```

ROUTINES CALLED:
```
------------------
 ESCPY        - EXTERNAL STRING COPY
 PTHPTR       - GET PATH POINTER
 SYSMSG       - SYSTEM MESSAGE ROUTINE
 MEMCPY
 STRLEN
 MEMSET
```

CALLED DIRECTLY BY:
```
--------------------
 CALLFP       - CALL FP ROUTINES
```

USED IN MAIN PROGRAM(S):
```
--------------------------
 MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation

NAME:               GWINDO
PURPOSE:            GET WINDOW
LANGUAGE:           C
MODULE TYPE:        FUNCTION
FUNCTION TYPE:      FORTRAN VOID ()
SOURCE FILE:        GWINDO
SOURCE FILE TYPE:   .C
HOST:
SUBSYSTEM:          UI
SUBDIRECTORY:       FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:
------------

    SYNOPSIS
        FORTRAN VOID GWINDO(EWPATH, NUMPP, CODEP)
            EPATH   EWPATH;
            INT     *NUMPP;
            CHAR    CODEP[];

        INPUTS:
            EWPATH - PATH NAME OF WINDOW

        OUTPUTS:
            NUMPP - NUMBER OF PAGES IN WINDOW
            CODEP - RETURN CODE

    DESCRIPTION
        GETS THE NUMBER OF PAGES IN A WINDOW.

ARGUMENTS:
----------

    EWPATH =        EPATH
    NUMPP =         INT *
    CODEP =         CHAR []


INCLUDE FILES:
--------------

    STDTYP      - STANDARD TYPE DEFINITIONS
    FPD         - FORM PROCESSOR DATA
    FPCODE      - FORM PROCESSOR RETURN CODES

FPPARM        - FORM PROCESSOR PARAMETERS

ROUTINES CALLED:
-----------------
  ESCPY        - EXTERNAL STRING COPY
  PTHPTR       - GET PATH POINTER
  MEMCPY

CALLED DIRECTLY BY:
--------------------
  CALLFP       - CALL FP ROUTINES

USED IN MAIN PROGRAM(S):
-------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                   INITVT
PURPOSE:                INITIAL VIRTUAL TERMINAL INTERFACE
LANGUAGE:               C
MODULE TYPE:            SUBROUTINE
FUNCTION TYPE:          VOID ()
SOURCE FILE:            INITVT
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC


DESCRIPTION:
------------

  SYNOPSIS
     INITVT(RCODE)
        CHAR RCODE[]

     INPUTS/OUTPUTS:


     INPUTS:
        NONE

     OUTPUTS:
        RCODE - STANDARD FORM PROCESSOR RETURN CODE

  DESCRIPTION
     SET VTI MODE FLAG AND INITIALIALIZE MAX BUFFER LENGTH TO O

ARGUMENTS:
----------

  RCODE =        CHAR []


INCLUDE FILES:
--------------

  STDTYP       - STANDARD TYPE DEFINITIONS
  FPD          - FORM PROCESSOR DATA
  FPCODE       - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:
-----------------

   MEMCPY


CALLED DIRECTLY BY:
--------------------

   CALLFP     - CALL FP ROUTINES


USED IN MAIN PROGRAM(S):
--------------------------

   MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                   INQLDV
PURPOSE:                INQUIRE LOGICAL DEVICE
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          FORTRAN VOID ()
SOURCE FILE:            INQLDV
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
      FORTRAN VOID INQLDV(LDWNID,RCODE)
          INT              *LDWNID;
          CHAR             RCODE[];


      INPUTS/OUTPUTS:


      INPUTS:
        ADDRESS OF:
                    LOGICAL DEVICES TOP WINDOW ID
                    RETURN CODE

      OUTPUTS:
        LDWNID - LOGICAL DEVICES TOP WINDOW ID
        RCODE  - RETURN CODE


  DESCRIPTION
      THIS MODULE RETURNS LOGICAL DEVICE ON WHICH APPLICATION
                    CURRENTLY RUNNING.
      IF NO LOGICAL DEVICE  FOUND WILL RETURN NFPDSTRC ERROR.

ARGUMENTS:
----------

  LDWNID =        INT *
  RCODE =         CHAR []


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INCLUDE FILES:
---------------
   STDTYP     - STANDARD TYPE DEFINITIONS
   FPD        - FORM PROCESSOR DATA
   FPCODE     - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
-----------------
   MEMCPY


CALLED DIRECTLY BY:
-------------------
   CALLFP     - CALL FP ROUTINES


USED IN MAIN PROGRAM(S):
-------------------------
   MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation

```
NAME:                   INSCR
PURPOSE:                INPUT SCREEN
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          CHAR * ()
SOURCE FILE:            OISCR
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC
```

DESCRIPTION:
------------

  SYNOPSIS

```
    CHAR *INSCR(PDPTR, WPTR, VBPTR, VBEND)
        PD    *PDPTR;
        FIELD *WPTR;
        CHAR  *VBPTR, *VBEND;
```

    INPUTS:
       PDPTR - POINTER TO PHYSICAL DEVICE INPUT IS FROM
       WPTR  - POINTER TO WINDOW INPUT IS FOR
       VBPTR - POINTER TO BEGINNING OF INPUT DATA
       VBEND - POINTER TO (CHARACTER PAST) END OF INPUT DATA

    OUTPUTS:
       RETURNS A RETURN CODE

  DESCRIPTION
     PROCESS THE VIRTUAL TERMINAL INPUT FOR THE SPECIFIED
                 WINDOW.

ARGUMENTS:
----------

```
    PDPTR =         PD *
    WPTR  =         FIELD *
    VBPTR =         CHAR *
    VBEND =         CHAR *
```

INCLUDE FILES:
--------------

STDTYP      - STANDARD TYPE DEFINITIONS
STDIO       - **** PURPOSE NOT FOUND BY STRIPPER ****
CTYPE       - **** PURPOSE NOT FOUND BY STRIPPER ****
TIME        - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD         - FORM PROCESSOR DATA
FPCODE      - FORM PROCESSOR RETURN CODES
FPPARM      - FORM PROCESSOR PARAMETERS
VTICOM      - VTI COMMUNICATION DEFINITIONS
FUNCTS      - FUNCTION DEFINITIONS
CTLCHR      - CONTROL CHARACTERS


ROUTINES CALLED:
-----------------

  OISCR/EVTBUF - EMPTY VTI BUFFER
  FUISWN       - FIND UIS WINDOW
  SYSMSG       - SYSTEM MESSAGE ROUTINE
  FREMSG
  OISCR/RSTMAT - RESET TEMPORAY ATTRIBUTES
  PFINP
  MEMCMP
  PMSGLC       - PUT MESSAGE LINE CODE
  OISCR/FVTBUF - FILL VTI BUFFER
  DSPMSG


CALLED DIRECTLY BY:
-------------------

  GDVINP       - GET DEVICE INPUT

FORM PROCESSOR Module Documentation

```
NAME:                   MABSAT
PURPOSE:                MAP ABSOLUTE ATTRIBUTE
LANGUAGE:               C
MODULE TYPE:            SUBROUTINE
FUNCTION TYPE:          VOID ()
SOURCE FILE:            MABSAT
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC
```

DESCRIPTION:
------------

```
  SYNOPSIS
     VOID MABSAT(BADP, ATTRIB, FADP)
         ATTDEF  *BADP;
         ATTMAP  *ATTRIB;
         ATTDEF  *FADP;

  INPUTS:
     BADP    = BACKGROUND ATTRIBUTE (ABSOLUTE)
     ATTRIB  = FOREGROUND ATTRIBUTE TO COMBINE WITH BACKGROUND

  OUTPUTS:
     FADP    = FOREGROUND ATTRIBUTE (ABSOLUTE)
```

DESCRIPTION
BUILD AN ATTRIBUTE DEFINITION BASED ON A BACKGROUND
ATTRIBUTE
DEFINITION AND AN ATTRIBUTE NAME.

ARGUMENTS:
----------
```
  BADP =          ATTDEF *
  ATTRIB =        ATTMAP *
  FADP =          ATTDEF *
```

INCLUDE FILES:
--------------
```
  STDTYP       - STANDARD TYPE DEFINITIONS
```

FPD          - FORM PROCESSOR DATA


ROUTINES CALLED:
------------------
  STRASN


CALLED DIRECTLY BY:
--------------------
  OISCR/GATINF - GET ATTRIBUTE INFO
  PUTATT/AABSAT - ATTRIBUTE ABSOLUTE SET ATTRIBUTE
  RSVATT/RSVRST - RESOLVE REST


USED IN MAIN PROGRAM(S):
--------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                    MAKAP
PURPOSE:                 MAKE APLICATION STRUTURE
LANGUAGE:                C
MODULE TYPE:             FUNCTION
FUNCTION TYPE:           CHAR * ()
SOURCE FILE:             MAKAP
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
     CHAR *MAKAP(PDPTR,APNAM,APCHAN)
        PD    *PDPTR
        NAME APNAM;
        CHAN APCHAN;


     INPUTS/OUTPUTS:


     INPUTS:
        PDPTR  - POINTER TO PHYSICAL DEVICE STRUCTURE
        APNAM  - NAME OF AP STRUCTURE WILL BE FOR - FROM NTM
        APCHAN - UNIQUE INSTANCE OF AP - FROM NTM

     OUTPUTS:
        RETURNS NULL IF SUCCESSFUL ELSE RETURNS ADDRESS OF
                        ERROR CODE

  DESCRIPTION
     THIS MODULE CREATES AND INSERTS A AP DATA STRUCTURE FOR A
                        USER

ARGUMENTS:
----------
   PDPTR =        PD *
   APNAM =        NAME
   APCHAN =       CHAN

INCLUDE FILES:
----------------

   STDTYP     - STANDARD TYPE DEFINITIONS
   FPD        - FORM PROCESSOR DATA
   FPCODE     - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
------------------

   CALLOC
   SYSMSG     - SYSTEM MESSAGE ROUTINE
   ESCPY      - EXTERNAL STRING COPY
   SBIT
   ATOI
   STUPFP     - SET UP FORM PROCESSOR DATA STRUCTURES
   RMVAP      - REMOVE APPLICATION
   MAKFPD     - MAKE FORM PROCESSOR DATA (LOGICAL DEVICE
                     STRUCTURE)
   CFREE


CALLED DIRECTLY BY:
--------------------

   UIS/STRTAP - START APPLICATION


USED IN MAIN PROGRAM(S):
-------------------------

   MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                      MAKFLD
PURPOSE:                   MAKE FIELD
LANGUAGE:                  C
MODULE TYPE:               FUNCTION
FUNCTION TYPE:             CHAR * ()
SOURCE FILE:               MAKFLD
SOURCE FILE TYPE:          .C
HOST:
SUBSYSTEM:                 UI
SUBDIRECTORY:              FP
DOCUMENTATION GROUP:       FORMPROC


DESCRIPTION:
------------

  SYNOPSIS
      CHAR *MAKFLD(PDP, RDP, LDP, PP, FLDNAM, ROW, COL, WIDTH,
                          DEPTH, TYPE,
             PERMAT)
         REGISTER FIELD **PDP;
         FIELD **RDP, **LDP, *PP;
         NAME FLDNAM;
         INT   ROW, COL, WIDTH, DEPTH;
         CHAR  TYPE;
         ATTMAP *PERMAT;

      INPUTS/OUTPUTS:
         FIELD **PDP - POINTER TO A POINTER TO BE SET TO THE
                       NEWLY CREATED FIELD

      INPUTS:
         FIELD **RDP - POINTER TO SET *PDP'S NXTFLD TO: EITHER A
                       &CONPTR, OR
                       &NXTFLD. *RDP IS THE VALUE YOU WANT TO
                       SET *PDP->NXTFLD
                       TO AND THE POINTER YOU WANT SET TO *PDP.
         FIELD **LDP - POINTER TO SET *PDP'S PRVFLD TO: EITHER A
                       &LSTPTR, OR
                       &PRVFLD (OR NULL IF THERE IS NONE). *LDP
                       IS THE VALUE YOU
                       WANT TO SET *PDP->PRVFLD TO AND THE
                       POINTER YOU WANT TO
                       *PDP. IF LDP IS NULL *PDP->PRVFLD IS SET

                        TO NULL ONLY.
        FIELD    *PP - PARENT OF NEWLY CREATED FIELD.
        NAME FLDNAM - NULL TERMINATED STRING WITH NAME OF NEW
                        FIELD.
        INT   ROW, COL, WIDTH, DEPTH - FOR THE NEW FIELD,
                        ABSOLUTE POSITIONS.
        CHAR    TYPE - FIELD TYPE (A, F, I, W).
        ATTMAP *PERMAT - ATTRIBUTE MAP ELEMENT TO PUT IN THIS
                        FIELD.

  DESCRIPTION
      MAKFLD CREATES A FIELD, THE FIELD'S POINTER IS RETURNED
                        IN PDP,
      THE FIELD'S PARENT IS POINTED TO BY PP, THE POSITION TO
                        CHAIN
      IN THE FIELD IS POINTED TO BY RDP AND LDP.

ARGUMENTS:
----------
  PDP =         FIELD **
  RDP =         FIELD **
  LDP =         FIELD **
  PP =        FIELD *
  FLDNAM =        NAME
  ROW =       INT
  COL =       INT
  WIDTH =       INT
  DEPTH =       INT
  TYPE =        CHAR
  PERMAT =        ATTMAP *


INCLUDE FILES:
--------------
  STDTYP      - STANDARD TYPE DEFINITIONS
  FPD         - FORM PROCESSOR DATA
  FPCODE      - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
----------------
  MALLOC
  SYSMSG      - SYSTEM MESSAGE ROUTINE
  STRCPY


CALLED DIRECTLY BY:

---------------------

  OPNFRM/PFREC - PROCESS FORM RECORD
  OPNFRM/PAR - PROCESS ARRAY
  OPNFRM/PIT - PROCESS ITEM
  OPNFRM/PFR - PROCESS FORM
  OPNFRM/PWI - PROCESS WINDOW
  STUPFP     - SET UP FORM PROCESSOR DATA STRUCTURES


USED IN MAIN PROGRAM(S):

---------------------------

  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                    MAKFPD
PURPOSE:                 MAKE FORM PROCESSOR DATA (LOGICAL DEVICE
                         STRUCTURE)
LANGUAGE:                C
MODULE TYPE:             FUNCTION
FUNCTION TYPE:           FPD * ()
SOURCE FILE:             MAKFPD
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
------------

   SYNOPSIS
      FPD *MAKFPD(PDPTR,APPTR)
        PD *PDPTR;
        AP *APPTR;


      INPUTS/OUTPUTS:


      INPUTS:
        PDPTR - POINTER TO PHYSICAL DEVICE IT WILL BELONG TO
        APPTR - POINTER TO APLICATION IT WILL BELONG TO

      OUTPUTS:
        RETURNS A POINTER TO STRUCTURE CREATED IF SUCCESSFUL
                        ELSE NULL POINTER

   DESCRIPTION
      THIS MODULE CREATES A LOGICAL DEVICE STRUCTURE FOR AN
                        APPLICATION ON
      A PARTICULAR PHYSICAL DEVICE.

ARGUMENTS:
----------

   PDPTR =          PD *
   APPTR =          AP *

INCLUDE FILES:
----------------

   STDTYP     - STANDARD TYPE DEFINITIONS
   FPD        - FORM PROCESSOR DATA


ROUTINES CALLED:
----------------

   CALLOC


CALLED DIRECTLY BY:
-------------------

   MAKAP      - MAKE APLICATION STRUTURE
   MAKUSR     - MAKE USER
   OPNLDV     - OPEN LOGICAL DEVICE


USED IN MAIN PROGRAM(S):
------------------------

   MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                   MAKPD
PURPOSE:                MAKE PHYSICAL DEVICE STRUCTURE
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          PD * ()
SOURCE FILE:            MAKPD
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC


DESCRIPTION:
------------


   SYNOPSIS
     PD *MAKPD(USRPTR,PDPRT,PDNAM,PDCHAN,SIZ)
        USR             *USRPTR;
        NAME            PDPRT;
        NAME            PDNAM;
        CHAN            PDCHAN;
        SIZE            *SIZ;

     INPUTS/OUTPUTS:


     INPUTS:
        USRPTR - POINTER TO USER FOR WHICH PHYSICAL DEVICE
                       STRUCTURE IS BEING
                  CREATED.
        PDPRT   - PHYSICAL PORT OF DEVICE
        PDNAM   - NAME/TYPE OF DEVICE
        PDCHAN - CHAN OF DEVICE - FROM NTM
        SIZ     - CONTAINS: ACTUAL MAX WIDTH OF DEVICE
                            ACTUAL MAX DEPTH OF DEVICE


     OUTPUTS:
        RETURNS A POINTER TO PD STRUCTURE IF SUCCESSFUL AND A
                       NULL POINTER
        IF FAILURE

   DESCRIPTION
        THIS MODULE CREATES AND INSERTS A STRUCTURE FOR A

PHYSICAL DEVICE FOR

A USER.

ARGUMENTS:
----------

  USRPTR =      USR *
  PDPRT =       NAME
  PDNAM =       NAME
  PDCHAN =      CHAN
  SIZ =        SIZE *


INCLUDE FILES:
--------------

  STDTYP      - STANDARD TYPE DEFINITIONS
  FPD         - FORM PROCESSOR DATA
  FPCODE      - FORM PROCESSOR RETURN CODES


RCUTINES CALLED:
----------------

  CALLOC
  ESCPY       - EXTERNAL STRING COPY


CALLED DIRECTLY BY:
-------------------

  MAKUSR      - MAKE USER
  UIS/STRTPD - START PHYSICAL DEVICE


USED IN MAIN PROGRAM(S):
------------------------

  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS FP PROCE...
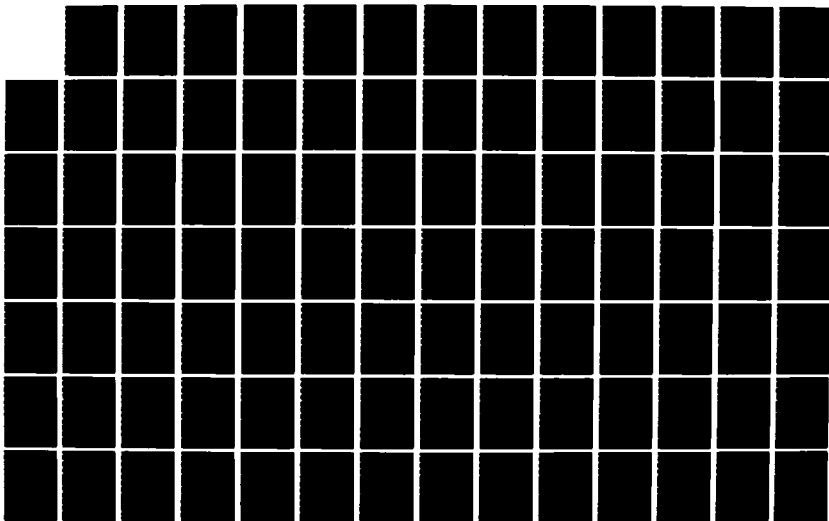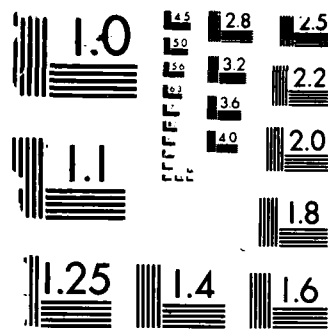
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963 A

FORM PROCESSOR Module Documentation


NAME:                   MAKUSR
PURPOSE:                MAKE USER
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          CHAR * ()
SOURCE FILE:            MAKUSR
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC

DESCRIPTION:
------------


  SYNOPSIS
     CHAR *MAKUSR(PDNAM,PDCHAN,MSGBUF,LEN)
        NAME PDNAM;
        CHAN PDCHAN;
        CHAR *MSGBUF;
        INT  *LEN;

     INPUTS/OUTPUTS:


     INPUTS:
        PDNAM   - NAME OF THE USER'S PHYSICAL DEVICE - FROM NTM
        PDCHAN  - CHAN OF THE USER'S PHYSICAL DEVICE - FROM NTM
        MSGBUF  - CONTAINS :PDWDTH - MAX WIDTH OF PHISCAL DEVICE
                            PDDPTH - MAX DEPTH OF PHISCAL DEVICE
        LEN     - LENGTH OF MESSAGE BUFFER

     OUTPUTS:
        IF ERROR RETURNS POINTER TO ERROR CODE ELSE RETURNS A
                    NULL POINTER

  DESCRIPTION
     THIS MODULE IS CALLED BY THE MONITOR TO CREATE AND INSERT
                    A USER
     STRUCTURE FOR A USER; IT CALLS MAKPD TO CREATE AND INSERT
                    A PHYSICAL
     DEVICE FOR THE USER ALSO.

ARGUMENTS:
----------

  PDNAM =        NAME
  PDCHAN =       CHAN
  MSGBUF =       CHAR *
  LEN =      INT *


INCLUDE FILES:
--------------

  STDTYP      - STANDARD TYPE DEFINITIONS
  FPD           - FORM PROCESSOR DATA
  FPCODE      - FORM PROCESSOR RETURN CODES
  FUNCTS      - FUNCTION DEFINITIONS
  CTLCHR      - CONTROL CHARACTERS


ROUTINES CALLED:
----------------

  BLDCMD
  GVTICMD
  SYSMSG      - SYSTEM MESSAGE ROUTINE
  STUPFP      - SET UP FORM PROCESSOR DATA STRUCTURES
  TRMUSR      - TERMINATE USER
  SPRINTF
  PDVOTP      - PUT DEVICE OUTPUT
  STRLEN
  MAKFPD      - MAKE FORM PROCESSOR DATA (LOGICAL DEVICE
                       STRUCTURE)
  RMVPD       - REMOVE PHYSICAL DEVICE DATA STRUCTRUE
  MAKPD       - MAKE PHYSICAL DEVICE STRUCTURE
  CFREE
  CALLOC


CALLED DIRECTLY BY:
-------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS


USED IN MAIN PROGRAM(S):
------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                   MONITR/GETPD
PURPOSE:                GET PHYSICAL DEVICE
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          PD * ()
SOURCE FILE:            MONITR
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC

DESCRIPTION:
-------------

  SYNOPSIS
      STATIC PD *GETPD(PDNAM, PDCHAN)
          ENAME PDNAM;
          CHAN  PDCHAN;

      INPUTS:
          PDNAM  - NAME OF THE USER'S PHYSICAL DEVICE
          PDCHAN - CHAN OF THE USER'S PHYSICAL DEVICE

      OUTPUTS:
          RETURNS POINTER TO THE SPECIFIED PHYSICAL DEVICE
                          STRUCTURE

  DESCRIPTION
      SEARCHES THROUGH THE PHYSICAL DEVICE STRUCTURES FOR ONE
                      WITH THE
      SPECIFIED NAME AND CHANNEL.  IF NOT FOUND, A NULL POINTER
                      IS RETURNED.

ARGUMENTS:
----------

  PDNAM =        ENAME
  PDCHAN =       CHAN


INCLUDE FILES:
---------------

  STDTYP     - STANDARD TYPE DEFINITIONS
  STDIO      - **** PURPOSE NOT FOUND BY STRIPPER ****


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| | |
|---|---|
| FPD | - FORM PROCESSOR DATA |
| FPDINI | - FPD INITIALIZATION |
| FPCODE | - FORM PROCESSOR RETURN CODES |
| FPPARM | - FORM PROCESSOR PARAMETERS |
| NTM | - NTM INTERFACE INCLUDE FILE |
| DBASEI | - DATABASE ITERFACE |
| FUNCTS | - FUNCTION DEFINITIONS |
| CTLCHR | - CONTROL CHARACTERS |

ROUTINES CALLED:
----------------

STRCMP
ESCPY       - EXTERNAL STRING COPY


CALLED DIRECTLY BY:
-------------------

  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS


USED IN MAIN PROGRAM(S):
------------------------

  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                   MONITR/MAIN
PURPOSE:                MAIN MODULE FOR MONITOR/UIS/FP PROCESS
LANGUAGE:               C
MODULE TYPE:            SUBROUTINE
FUNCTION TYPE:          VOID ()
SOURCE FILE:            MONITR
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
     VOID MAIN()

  DESCRIPTION
        THIS MODULE IS THE MAIN MODULE FOR MONITOR/UIS/FP
                      PROCESS. IT
        MONITORS INPUT FROM NTM: DECIDING WHAT ACTION IS
                      REQUIRED AND CALLING
        THE APPROPRIATE ROUTINE(S).


INCLUDE FILES:
--------------
     STDTYP     - STANDARD TYPE DEFINITIONS
     STDIO      - **** PURPOSE NOT FOUND BY STRIPPER ****
     FPD        - FORM PROCESSOR DATA
     FPDINI     - FPD INITIALIZATION
     FPCODE     - FORM PROCESSOR RETURN CODES
     FPPARM     - FORM PROCESSOR PARAMETERS
     NTM        - NTM INTERFACE INCLUDE FILE
     DBASEI     - DATABASE ITERFACE
     FUNCTS     - FUNCTION DEFINITIONS
     CTLCHR     - CONTROL CHARACTERS


ROUTINES CALLED:
----------------
     BLDCMD

```
INITAL
MEMCMP
UIS        - USR INTERFACE SERVICES
ESCPY      - EXTERNAL STRING COPY
SFPDAP     - SET FORM PROCESSOR DATA STRUCTURE FOR APLICATION
RMVAP      - REMOVE APPLICATION
CALLFP     - CALL FP ROUTINES
PUTW
RMVPD      - REMOVE PHYSICAL DEVICE DATA STRUCTRUE
TRMUSR     - TERMINATE USER
STRCHR
MAKUSR     - MAKE USER
STRCMP
GVTICMD
MAX
ONWISC     - OUTPUT (NO WAIT) / INPUT SCREEN
OUTSCR     - OUTPUT SCREEN
FSEEK
PMSGLC     - PUT MESSAGE LINE CODE
SYSMSG     - SYSTEM MESSAGE ROUTINE
GDVINP     - GET DEVICE INPUT
FCLOSE
MONITR/GETPD - GET PHYSICAL DEVICE
FEOF
FERROR
FREAD
GETW
FTELL
FPRINTF
MEMCPY
FWRITE
MIN
SPRINTF
NSEND
PUTC
TRMNAT
MEMSET
RCV
FOPEN
DBCLSE
DBOPEN
```

FORM PROCESSOR Module Documentation


NAME:                  OISCR/ADDCMD
PURPOSE:               ADD COMMAND TO BUFFER
LANGUAGE:              C
MODULE TYPE:           SUBROUTINE
FUNCTION TYPE:         VOID ()
SOURCE FILE:           OISCR
SOURCE FILE TYPE:      .C
HOST:
SUBSYSTEM:             UI
SUBDIRECTORY:          FP
DOCUMENTATION GROUP:   FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
     VOID ADDCMD(D, S, L)
          PD   *D;
          CHAR *S;
          INT  L;

     INPUTS:
          D - DEVICE SENDING DATA TO
          S - STRING TO ADD TO COMMAND BUFFER
          L - LENGTH OF STRING

  DESCRIPTION
     THE SPECIFIED STRING IS ADDED TO THE (GLOBAL) COMMAND
                       BUFFER.  IF THERE
     ISN'T ENOUGH ROOM, THE BUFFER IS FLUSHED (VIA PDVOTP)
                       FIRST.

ARGUMENTS:
----------

     D =       PD *
     S =       CHAR *
     L =       INT


INCLUDE FILES:
--------------

     STDTYP    - STANDARD TYPE DEFINITIONS
     STDIO     - **** PURPOSE NOT FOUND BY STRIPPER ****
     CTYPE     - **** PURPOSE NOT FOUND BY STRIPPER ****

```
TIME        - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD         - FORM PROCESSOR DATA
FPCODE      - FORM PROCESSOR RETURN CODES
FPPARM      - FORM PROCESSOR PARAMETERS
VTICOM      - VTI COMMUNICATION DEFINITIONS
FUNCTS      - FUNCTION DEFINITIONS
CTLCHR      - CONTROL CHARACTERS
```

ROUTINES CALLED:
-------------------

```
MEMCPY
PDVOTP      - PUT DEVICE OUTPUT
```

CALLED DIRECTLY BY:
--------------------

```
OISCR/FVTBUF - FILL VTI BUFFER
OISCR/PROCFLD - PROCESS FIELD
OISCR/PROCWIN - PROCESS WINDOW
```

USED IN MAIN PROGRAM(S):
--------------------------

```
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation

```
NAME:                  OISCR/CMPALL
PURPOSE:               COMPUTE ALL CALCULATED FIELDS
LANGUAGE:              C
MODULE TYPE:           FUNCTION
FUNCTION TYPE:         CHAR * ()
SOURCE FILE:           OISCR
SOURCE FILE TYPE:      .C
HOST:
SUBSYSTEM:             UI
SUBDIRECTORY:          FP
DOCUMENTATION GROUP:   FORMPROC
```

DESCRIPTION:
-------------

```
  SYNOPSIS
      STATIC CHAR *CMPALL(DP)
         FIELD *DP;

      INPUTS:
         DP - POINTER TO FIRST FIELD TO BE COMPUTED

      OUTPUTS:
         RETURNS A RETURN CODE

   DESCRIPTION
      ALL FIELDS SUBORDINATE TO THE GIVEN FIRST FIELD ARE
                       EXAMINED; IF A FIELD
      HAS BEEN CHANGED (EITHER ON INPUT OR OUTPUT), ALL OF THE
                       FIELD WHICH ARE
      DEPENDENT ON IT ARE RECALCULATED IF THEY HAVE NOT ALREADY
                       BEEN CALCULATED
      (A FIELD IS CONSIDERED TO HAVE ALREADY BEEN CALCULATED IF
                       IT HAS BEEN
      CHANGED ON OUTPUT).
```

ARGUMENTS:
-----------

```
  DP =          FIELD *
```

INCLUDE FILES:
--------------

```
   STDTYP       - STANDARD TYPE DEFINITIONS
```

```
STDIO      - **** PURPOSE NOT FOUND BY STRIPPER ****
CTYPE      - **** PURPOSE NOT FOUND BY STRIPPER ****
TIME       - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD        - FORM PROCESSOR DATA
FPCODE     - FORM PROCESSOR RETURN CODES
FPPARM     - FORM PROCESSOR PARAMETERS
VTICOM     - VTI COMMUNICATION DEFINITIONS
FUNCTS     - FUNCTION DEFINITIONS
CTLCHR     - CONTROL CHARACTERS
```

ROUTINES CALLED:
--------------------

```
  OISCR/CMPALL - COMPUTE ALL CALCULATED FIELDS
  CMPFLD       - COMPUTE FIELD
```

CALLED DIRECTLY BY:
----------------------

```
  OISCR/DSPSCR - DISPLAY SCREEN
  OISCR/CMPALL - COMPUTE ALL CALCULATED FIELDS
```

USED IN MAIN PROGRAM(S):
-------------------------

```
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation


NAME:                    OISCR/CNGMSG
PURPOSE:                 CHECK FOR AND PROCESS CHANGE MESSAGE
                         REQUESTS
LANGUAGE:                C
MODULE TYPE:             FUNCTION
FUNCTION TYPE:           CHAR * ()
SOURCE FILE:             OISCR
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
-------------

  SYNOPSIS
      STATIC CHAR *CNGMSG(COUNT)
        INT COUNT;
      INPUTS:
          COUNT - MESSAGE COUNT RECEIVED FROM DEVICE
      OUTPUTS:
          RETURNS A RETURN CODE

  DESCRIPTION
      CNGMSG ALLOWS THE USER TO SCROLL THROUGH THE MESSAGES IN
                      THE
      MESSAGE LINE BUFFER. IT PUTS THE MESSAGE CORRESPONDING TO
                      THE
      NUMBER SPECIFIED BY THE USER INTO THE MESSAGE LINE ON THE
      TERMINAL SCREEN.

ARGUMENTS:
-----------

  COUNT =        INT


INCLUDE FILES:
---------------

    STDTYP      - STANDARD TYPE DEFINITIONS
    STDIO       - **** PURPOSE NOT FOUND BY STRIPPER ****
    CTYPE       - **** PURPOSE NOT FOUND BY STRIPPER ****
    TIME        - **** PURPOSE NOT FOUND BY STRIPPER ****
    FPD         - FORM PROCESSOR DATA

```
FPCODE    - FORM PROCESSOR RETURN CODES
FPPARM    - FORM PROCESSOR PARAMETERS
VTICOM    - VTI COMMUNICATION DEFINITIONS
FUNCTS    - FUNCTION DEFINITIONS
CTLCHR    - CONTROL CHARACTERS
```

ROUTINES CALLED:
-----------------
```
SYSMSG    - SYSTEM MESSAGE ROUTINE
```

CALLED DIRECTLY BY:
-------------------
```
OISCR/EVTBUF - EMPTY VTI BUFFER
```

FORM PROCESSOR Module Documentation


NAME:                    OISCR/DSPSCR
PURPOSE:                 DISPLAY SCREEN
LANGUAGE:                C
MODULE TYPE:             SUBROUTINE
FUNCTION TYPE:           VOID ()
SOURCE FILE:             OISCR
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC


DESCRIPTION:
------------

  SYNOPSIS
     STATIC VOID DSPSCR()

  DESCRIPTION
     DISPLAY ALL INTERNALLY CALCULATED FIELDS INCLUDING ALL
                      USER CALCULATED
     FIELDS.


INCLUDE FILES:
--------------

   STDTYP      - STANDARD TYPE DEFINITIONS
   STDIO       - **** PURPOSE NOT FOUND BY STRIPPER ****
   CTYPE       - **** PURPOSE NOT FOUND BY STRIPPER ****
   TIME        - **** PURPOSE NOT FOUND BY STRIPPER ****
   FPD         - FORM PROCESSOR DATA
   FPCODE      - FORM PROCESSOR RETURN CODES
   FPPARM      - FORM PROCESSOR PARAMETERS
   VTICOM      - VTI COMMUNICATION DEFINITIONS
   FUNCTS      - FUNCTION DEFINITIONS
   CTLCHR      - CONTROL CHARACTERS


ROUTINES CALLED:
----------------

   OISCR/CMPALL - COMPUTE ALL CALCULATED FIELDS
   PDATA        - PUT FORM DATA
   SPRINTF
   LOCALTIME

TIME

CALLED DIRECTLY BY:
--------------------
  OISCR/FVTBUF - FILL VTI BUFFER

USED IN MAIN PROGRAM(S):
-------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation

NAME:                    OISCR/EVTBUF
PURPOSE:                 EMPTY VTI BUFFER
LANGUAGE:                C
MODULE TYPE:             FUNCTION
FUNCTION TYPE:           CHAR * ()
SOURCE FILE:             OISCR
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
     STATIC CHAR *EVTBUF(PDPTR, VBPTR, VBEND)
         PD    *PDPTR;
         CHAR *VBPTR, *VBEND;

     INPUTS:
         PDPTR - POINTER TO PHYSICAL DEVICE INPUT IS FROM
         VBPTR - POINTER TO START OF INPUT BUFFER
         VBEND - POINTER TO (CHARACTER PAST) END OF INPUT BUFFER

     OUTPUTS:
         RETURNS A RETURN CODE

  DESCRIPTION
     GETS DATA FROM THE VIRTUAL TERMINAL BUFFER AND STORES IT
                       IN THE FPD
     DATA STRUCTURE.

ARGUMENTS:
----------

  PDPTR =        PD *
  VBPTR =        CHAR *
  VBEND =        CHAR *


INCLUDE FILES:
--------------

  STDTYP      - STANDARD TYPE DEFINITIONS
  STDIO       - **** PURPOSE NOT FOUND BY STRIPPER ****

```
CTYPE        - **** PURPOSE NOT FOUND BY STRIPPER ****
TIME         - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD          - FORM PROCESSOR DATA
FPCODE       - FORM PROCESSOR RETURN CODES
FPPARM       - FORM PROCESSOR PARAMETERS
VTICOM       - VTI COMMUNICATION DEFINITIONS
FUNCTS       - FUNCTION DEFINITIONS
CTLCHR       - CONTROL CHARACTERS
```

ROUTINES CALLED:
-----------------
```
STRASN
MEMSET
CBPTR
MEMCPY
BLEN
ISPRINT
FNFPWN       - FIND FORM PROCESSOR WINDOW
MATOI
OISCR/CNGMSG - CHECK FOR AND PROCESS CHANGE MESSAGE REQUESTS
SYSMSG       - SYSTEM MESSAGE ROUTINE
GVTICMD
BLDCMD
```

CALLED DIRECTLY BY:
--------------------
```
INSCR        - INPUT SCREEN
```

FORM PROCESSOR Module Documentation


NAME:                     OISCR/FVTBUF
PURPOSE:                  FILL VTI BUFFER
LANGUAGE:                 C
MODULE TYPE:              FUNCTION
FUNCTION TYPE:            CHAR * ()
SOURCE FILE:              OISCR
SOURCE FILE TYPE:         .C
HOST:
SUBSYSTEM:                UI
SUBDIRECTORY:             FP
DOCUMENTATION GROUP:      FORMPROC

DESCRIPTION:
------------
  SYNOPSIS
     STATIC CHAR *FVTBUF(INPFLG)
         BOOL INPFLG;

     INPUTS:
         INPFLG - INPUT FLAG (TRUE IF INPUT IS TO BE ENABLED)

     OUTPUTS:
         RETURNS A RETURN CODE

  DESCRIPTION
     BUILDS A VTI DATA STREAM FROM THE DISPLAY LIST.

ARGUMENTS:
----------
   INPFLG =          BOOL


INCLUDE FILES:
--------------
   STDTYP      - STANDARD TYPE DEFINITIONS
   STDIO       - **** PURPOSE NOT FOUND BY STRIPPER ****
   CTYPE       - **** PURPOSE NOT FOUND BY STRIPPER ****
   TIME        - **** PURPOSE NOT FOUND BY STRIPPER ****
   FPD         - FORM PROCESSOR DATA
   FPCODE      - FORM PROCESSOR RETURN CODES
   FPPARM      - FORM PROCESSOR PARAMETERS
   VTICOM      - VTI COMMUNICATION DEFINITIONS
   FUNCTS      - FUNCTION DEFINITIONS

CTLCHR      - CONTROL CHARACTERS

ROUTINES CALLED:
-----------------
  DSPMSG
  PDVOTP      - PUT DEVICE OUTPUT
  OISCR/PROCWIN - PROCESS WINDOW
  OISCR/PROCFLD - PROCESS FIELD
  STRLEN
  OISCR/ADDCMD - ADD COMMAND TO BUFFER
  SPRINTF
  OISCR/DSPSCR - DISPLAY SCREEN

CALLED DIRECTLY BY:
------------------
  OUTSCR      - OUTPUT SCREEN
  ONWISC      - OUTPUT (NO WAIT) / INPUT SCREEN
  INSCR       - INPUT SCREEN

USED IN MAIN PROGRAM(S):
------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                    OISCR/GATINF
PURPOSE:                 GET ATTRIBUTE INFO
LANGUAGE:                C
MODULE TYPE:             SUBROUTINE
FUNCTION TYPE:           VOID ()
SOURCE FILE:             OISCR
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
     VOID GATINF(DP, ATP)
        FIELD *DP;
        ATTDEF *ATP;

     INPUTS:
        DP  - FIELD TO GET ATTRIBUTE INFORMATION FOR

     OUTPUTS:
        ATP - POINTER TO ATTRIBUTES

  DESCRIPTION
     RETURNS THE CURRENT ATTRIBUTES OF THE SPECIFIED FIELD,
                      TAKING TEMPORARY
     ATTRIBUTES INTO ACCOUNT.

ARGUMENTS:
----------

  DP  =        FIELD *
  ATP =         ATTDEF *


INCLUDE FILES:
--------------
  STDTYP      - STANDARD TYPE DEFINITIONS
  STDIO       - **** PURPOSE NOT FOUND BY STRIPPER ****
  CTYPE       - **** PURPOSE NOT FOUND BY STRIPPER ****
  TIME        - **** PURPOSE NOT FOUND BY STRIPPER ****
  FPD         - FORM PROCESSOR DATA


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FPCODE     - FORM PROCESSOR RETURN CODES
FPPARM     - FORM PROCESSOR PARAMETERS
VTICOM     - VTI COMMUNICATION DEFINITIONS
FUNCTS     - FUNCTION DEFINITIONS
CTLCHR     - CONTROL CHARACTERS


ROUTINES CALLED:
------------------

  MABSAT     - MAP ABSOLUTE ATTRIBUTE
  STRASN


CALLED DIRECTLY BY:
----------------------

  OISCR/PROCFLD - PROCESS FIELD


USED IN MAIN PROGRAM(S):
----------------------------

  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                  OISCR/PROCFLD
PURPOSE:               PROCESS FIELD
LANGUAGE:              C
MODULE TYPE:           SUBROUTINE
FUNCTION TYPE:         VOID ()
SOURCE FILE:           OISCR
SOURCE FILE TYPE:      .C
HOST:
SUBSYSTEM:             UI
SUBDIRECTORY:          FP
DOCUMENTATION GROUP:   FORMPROC


DESCRIPTION:
-------------

  SYNOPSIS
     STATIC VOID PROCFLD(DP, CNGALL, DROW, DCOL)
         FIELD *DP;
         BOOL   CNGALL;
         INT    DROW, DCOL;

     INPUTS:
         DP      - FIELD TO PROCESS
         CNGALL  - GLOBAL CHANGE FLAG
         DROW    - OFFSET TO BE ADDED TO FIELD ROW
         DCOL    - OFFSET TO BE ADDED TO FIELD COLUMN

  DESCRIPTION
     DO DEFINE FIELD OR DEFINE WINDOW FOR CURRENT FIELD AND
                      COMPUTE DEFAULT
     CURSOR POSITION.

ARGUMENTS:
-----------

   DP =         FIELD *
   CNGALL =        BOOL
   DROW =       INT
   DCOL =       INT


INCLUDE FILES:
---------------

   STDTYP      - STANDARD TYPE DEFINITIONS
   STDIO       .... PURPOSE NOT FOUND BY STRIPPER ....

```
CTYPE      - **** PURPOSE NOT FOUND BY STRIPPER ****
TIME       - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD        - FORM PROCESSOR DATA
FPCODE     - FORM PROCESSOR RETURN CODES
FPPARM     - FORM PROCESSOR PARAMETERS
VTICOM     - VTI COMMUNICATION DEFINITIONS
FUNCTS     - FUNCTION DEFINITIONS
CTLCHR     - CONTROL CHARACTERS
```

ROUTINES CALLED:
-----------------
```
POSCUR      - POSITION CURSOR
CBPTR
BLEN
STRCAT
OISCR/PROCFLD - PROCESS FIELD
ABS
MIN
OISCR/ADDCMD - ADD COMMAND TO BUFFER
SYSMSG      - SYSTEM MESSAGE ROUTINE
PDVOTP      - PUT DEVICE OUTPUT
STRLEN
SPRINTF
OISCR/GATINF - GET ATTRIBUTE INFO
```

CALLED DIRECTLY BY:
---------------------
```
OISCR/FVTBUF - FILL VTI BUFFER
OISCR/PROCFLD - PROCESS FIELD
OISCR/PROCWIN - PROCESS WINDOW
```

USED IN MAIN PROGRAM(S):
---------------------------
```
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation

```
NAME:                 OISCR/PROCWIN
PURPOSE:              PROCESS WINDOW
LANGUAGE:             C
MODULE TYPE:          SUBROUTINE
FUNCTION TYPE:        VOID ()
SOURCE FILE:          OISCR
SOURCE FILE TYPE:     .C
HOST:
SUBSYSTEM:            UI
SUBDIRECTORY:         FP
DOCUMENTATION GROUP:  FORMPROC
```

DESCRIPTION:
------------

SYNOPSIS
   STATIC VOID PROCWIN(DP, CNGALL, DROW, DCOL)
       FIELD *DP;
       BOOL  CNGALL;
       INT   DROW, DCOL;

   INPUTS:
       DP      - FIELD TO PROCESS
       CNGALL  - GLOBAL CHANGE FLAG
       DROW    - OFFSET TO BE ADDED TO FIELD ROW
       DCOL    - OFFSET TO BE ADDED TO FIELD COLUMN

DESCRIPTION
   DO SET WINDOW COMMAND FOR CURRENT WINDOW AND PROCESS
                   CONTAINED FIELDS.

ARGUMENTS:
----------

   DP =          FIELD *
   CNGALL =        BOOL
   DROW =        INT
   DCOL =        INT


INCLUDE FILES:
--------------

   STDTYP    - STANDARD TYPE DEFINITIONS
   STDIO     - **** PURPOSE NOT FOUND BY STRIPPER ****
   CTYPE     - **** PURPOSE NOT FOUND BY STRIPPER ****

```
TIME        - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD         - FORM PROCESSOR DATA
FPCODE      - FORM PROCESSOR RETURN CODES
FPPARM      - FORM PROCESSOR PARAMETERS
VTICOM      - VTI COMMUNICATION DEFINITIONS
FUNCTS      - FUNCTION DEFINITIONS
CTLCHR      - CONTROL CHARACTERS
```

ROUTINES CALLED:
----------------

```
OISCR/PROCFLD - PROCESS FIELD
STRLEN
OISCR/ADDCMD - ADD COMMAND TO BUFFER
SPRINTF
OISCR/PROCWIN - PROCESS WINDOW
ABS
```

CALLED DIRECTLY BY:
-------------------

```
OISCR/FVTBUF - FILL VTI BUFFER
OISCR/PROCWIN - PROCESS WINDOW
```

USED IN MAIN PROGRAM(S):
------------------------

```
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation


```
NAME:                   OISCR/RSTINP
PURPOSE:                RESET INPUT FLAGS
LANGUAGE:               C
MODULE TYPE:            SUBROUTINE
FUNCTION TYPE:          VOID ()
SOURCE FILE:            OISCR
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC
```

DESCRIPTION:
-------------

  SYNOPSIS
    STATIC VOID RSTINP(DP)
      FIELD *DP;

    INPUTS:
      DP - POINTER TO FIELD TO RESET INPUT FLAGS FOR


    OUTPUTS:
     NONE

  DESCRIPTION
    RSTINP RESETS THE CHANGED ON INPUT FLAGS FOR A FIELD AND
               ITS CHILDREN

ARGUMENTS:
-----------

  DP =         FIELD *


INCLUDE FILES:
---------------

    STDTYP      - STANDARD TYPE DEFINITIONS
    STDIO       - **** PURPOSE NOT FOUND BY STRIPPER ****
    CTYPE       - **** PURPOSE NOT FOUND BY STRIPPER ****
    TIME        - **** PURPOSE NOT FOUND BY STRIPPER ****
    FPD         - FORM PROCESSOR DATA
    FPCODE      - FORM PROCESSOR RETURN CODES
    FPPARM      - FORM PROCESSOR PARAMETERS

VTICOM     - VTI COMMUNICATION DEFINITIONS
FUNCTS     - FUNCTION DEFINITIONS
CTLCHR     - CONTROL CHARACTERS


ROUTINES CALLED:
-----------------
  OISCR/RSTINP - RESET INPUT FLAGS
  BLEN
  PBPTR
  CBPTR
  MEMCPY


CALLED DIRECTLY BY:
-------------------
  OISCR/RSTINP - RESET INPUT FLAGS
  ONWISC     - OUTPUT (NO WAIT) / INPUT SCREEN


USED IN MAIN PROGRAM(S):
------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                   OISCR/RSTMAT
PURPOSE:                RESET TEMPORAY ATTRIBUTES
LANGUAGE:               C
MODULE TYPE:            SUBROUTINE
FUNCTION TYPE:          VOID ()
SOURCE FILE:            OISCR
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC


DESCRIPTION:
-------------

  SYNOPSIS
      STATIC VOID RSTMAT(DP)
          FIELD *DP;

      INPUTS:
          DP - POINTER TO FIELD TO RESET TEMPORARY ATTRIBUTES FOR

  DESCRIPTION
      RSTMAT RESETS THE TEMPORARY ATTRIBUTE FOR A FIELD AND ITS
                      CHILDREN


ARGUMENTS:
-----------

  DP =        FIELD *


INCLUDE FILES:
---------------

    STDTYP      - STANDARD TYPE DEFINITIONS
    STDIO       - **** PURPOSE NOT FOUND BY STRIPPER ****
    CTYPE       - **** PURPOSE NOT FOUND BY STRIPPER ****
    TIME        - **** PURPOSE NOT FOUND BY STRIPPER ****
    FPD         - FORM PROCESSOR DATA
    FPCODE      - FORM PROCESSOR RETURN CODES
    FPPARM      - FORM PROCESSOR PARAMETERS
    VTICOM      - VTI COMMUNICATION DEFINITIONS
    FUNCTS      - FUNCTION DEFINITIONS
    CTLCHR      - CONTROL CHARACTERS

ROUTINES CALLED:
-----------------

  OISCR/RSTMAT - RESET TEMPORAY ATTRIBUTES


CALLED DIRECTLY BY:
-------------------

  OISCR/RSTMAT - RESET TEMPORAY ATTRIBUTES
  INSCR       - INPUT SCREEN

FORM PROCESSOR Module Documentation


NAME:                    OISCR/SETWIN
PURPOSE:                 SET WINDOW
LANGUAGE:                C
MODULE TYPE:             SUBROUTINE
FUNCTION TYPE:           VOID ()
SOURCE FILE:             OISCR
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
      STATIC VOID SETWIN(DP, WP, ATT)
          FIELD  *DP, *WP;
          ATTMAP *ATT;

      INPUTS
          DP  - POINTER TO TOP FIELD TO CHANGE ATTRIBUTE OF
          WP  - POINTER TO LAST FIELD TO CHANGE ATTRIBUTE OF
          ATT - ATTRIBUTE TO SET

  DESCRIPTION
      STARTING WITH THE SPECIFIED FIELD, SET IT AND ALL OF ITS
                      DECENDANTS'
      TEMPORARY ATTRIBUTES, STOPPING AT THE SPECIFIED LAST
                      FIELD.

ARGUMENTS:
----------

  DP =          FIELD *
  WP =          FIELD *
  ATT =         ATTMAP *


INCLUDE FILES:
--------------

  STDTYP       - STANDARD TYPE DEFINITIONS
  STDIO        - **** PURPOSE NOT FOUND BY STRIPPER ****
  CTYPE        - **** PURPOSE NOT FOUND BY STRIPPER ****
  TIME         - **** PURPOSE NOT FOUND BY STRIPPER ****

FPD        - FORM PROCESSOR DATA
FPCODE     - FORM PROCESSOR RETURN CODES
FPPARM     - FORM PROCESSOR PARAMETERS
VTICOM     - VTI COMMUNICATION DEFINITIONS
FUNCTS     - FUNCTION DEFINITIONS
CTLCHR     - CONTROL CHARACTERS


ROUTINES CALLED:
------------------

  OISCR/SETWIN - SET WINDOW


CALLED DIRECTLY BY:
--------------------

  OISCR/SETWIN - SET WINDOW
  ONWISC       - OUTPUT (NO WAIT) / INPUT SCREEN


USED IN MAIN PROGRAM(S):
-------------------------

  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation

```
NAME:                   ONWISC
PURPOSE:                OUTPUT (NO WAIT) / INPUT SCREEN
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          BOOL ()
SOURCE FILE:            OISCR
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC
```

DESCRIPTION:
-------------

```
  SYNOPSIS
     BOOL ONWISC(PATH, CODEP)
        EPATH PATH;
        CHAR CODEP[];

     INPUTS:
        PATH - WINDOW TO ACCEPT INPUT FROM

     OUTPUTS:
        CODEP - RETURN CODE
        RETURNS ALSO SUCCESS = 0 / FAILURE = 1

  DESCRIPTION
     DISPLAYS THE FORMS ON THE DISPLAY LIST AND SETS INPUT
                     PENDING ON THE
     SPECIFIED WINDOW.
```

ARGUMENTS:
-----------

```
   PATH =        EPATH
   CODEP =       CHAR []
```

INCLUDE FILES:
---------------

```
   STDTYP    - STANDARD TYPE DEFINITIONS
   STDIO     - **** PURPOSE NOT FOUND BY STRIPPER ****
   CTYPE     - **** PURPOSE NOT FOUND BY STRIPPER ****
   TIME      - **** PURPOSE NOT FOUND BY STRIPPER ****
```

```
FPD         - FORM PROCESSOR DATA
FPCODE      - FORM PROCESSOR RETURN CODES
FPPARM      - FORM PROCESSOR PARAMETERS
VTICOM      - VTI COMMUNICATION DEFINITIONS
FUNCTS      - FUNCTION DEFINITIONS
CTLCHR      - CONTROL CHARACTERS
```

ROUTINES CALLED:
-----------------
```
ESCPY        - EXTERNAL STRING COPY
PTHPTR       - GET PATH POINTER
OISCR/SETWIN - SET WINDOW
OISCR/RSTINP - RESET INPUT FLAGS
OISCR/FVTBUF - FILL VTI BUFFER
MEMCPY
SYSMSG       - SYSTEM MESSAGE ROUTINE
GATDEF       - GET ATTRIBUTE DEFINITION
```

CALLED DIRECTLY BY:
--------------------
```
CALLFP      - CALL FP ROUTINES
MONITR/MAI  - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
UIS         - USR INTERFACE SERVICES
```

USED IN MAIN PROGRAM(S):
--------------------------
```
MONITR/MAI  - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation


NAME:                    OPNFRM
PURPOSE:                 OPEN FORM
LANGUAGE:                C
MODULE TYPE:             FUNCTION
FUNCTION TYPE:           FORTRAN VOID ()
SOURCE FILE:             OPNFRM
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC


DESCRIPTION:
- - - - - - - - - - - -

  SYNOPSIS
     FORTRAN VOID OPNFRM(FRMNAM, CODEP)
  ENAME FRMNAM;
  CHAR CODEP[];

    INPUTS:
  FRMNAM - NAME OF FORM TO OPEN

    OUTPUTS:
  CODEP - RETURN CODE

  DESCRIPTION
     OPNFRM IS USED TO RETRIEVE A FORM FROM A LIBRARY. NORMAL
                     SEARCH
     RULES ARE USED TO FIND THE FORM. THE FORM IS MADE ACTIVE
                     AND THE
     DEFAULT FIELD DATA IS MADE AVAILABLE. IF THE FORM
                     CONTAINS SUBFORMS
     THEY ARE ALSO OPENED. THE FORM IS NOT DISPLAYED AT THIS
                     POINT.

ARGUMENTS:
- - - - - - - - - -

  FRMNAM =        ENAME
  CODEP -         CHAR []


INCLUDE FILES

------------

```
   STDTYP      -  STANDARD TYPE DEFINITIONS
   STDIO       -  **** PURPOSE NOT FOUND BY STRIPPER ****
   CTYPE       -  **** PURPOSE NOT FOUND BY STRIPPER ****
   FPD         -  FORM PROCESSOR DATA
   FFFV2       -  FORM FILE FORMAT - VERSION 2
   FPCODE      -  FORM PROCESSOR RETURN CODES
```

ROUTINES CALLED:

------------------

```
   ESCPY       -  EXTERNAL STRING COPY
   STRUPC
   GOFPTR      -  GET OPEN FROM POINTER
   SYSMSG      -  SYSTEM MESSAGE ROUTINE
   OPNFRM/PFREC -  PROCESS FORM RECORD
   DELFLD      -  DELETE FIELD
   FCLOSE
   MEMCPY
   SPRINTF
   FOPEN
```

CALLED DIRECTLY BY:

---------------------

```
   CALLFP      -  CALL FP ROUTINES
   COPFRM      -  COPY FORM
   OPNFRM/PFR  -  PROCESS FORM
   UIS         -  USR INTERFACE SERVICES
```

USED IN MAIN PROGRAM(S):

----------------------------

```
   MONITR/MAI  -  MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation

NAME                    OPNFRM/BDBUFF
PURPOSE                 BUILD DEFAULT BUFFER
LANGUAGE                C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          CHAR * ( )
SOURCE FILE:            OPNFRM
SOURCE FILE TYPE        .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC

DESCRIPTION
- - - - - - - - - - -

  DESCRIPTION
      BDBUFF GETS DEFAULT FIELD VALUES FROM THE FORM DESCRIPTION
      FILE AND USES THEM TO BUILD THE DEFAULT BUFFER.

ARGUMENTS.
- - - - - - - - - -

  FILE =        FILE *
  FRP =         FRMREC *
  FP =          FIELD *


INCLUDE FILES:
- - - - - - - - - - - - - - -

  STDTYP      - STANDARD TYPE DEFINITIONS
  STDIO       - **** PURPOSE NOT FOUND BY STRIPPER ****
  CTYPE       - **** PURPOSE NOT FOUND BY STRIPPER ****
  FPD         - FORM PROCESSOR DATA
  FFFV2       - FORM FILE FORMAT - VERSION 2
  FPCODE      - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
- - - - - - - - - - - - - - -

  FREE
  OPNFRM.BFLDDB - BUILD FIELD DEFAULT BUFFER
  GETC
  ISCNTRL
  FEOF
  FERROR


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SYSMSG       - SYSTEM MESSAGE ROUTINE
MALLOC

CALLED DIRECTLY BY:
- - - - - - - - - - - - - - - - - - -
  OPNFRM/PFREC - PROCESS FORM RECORD

USED IN MAIN PROGRAM(S):
- - - - - - - - - - - - - - - - - - - - - - -
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation

NAME:                   OPNFRM/BFLDDB
PURPOSE:                BUILD FIELD DEFAULT BUFFER
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          CHAR * ()
SOURCE FILE:            OPNFRM
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC

DESCRIPTION:
------------

  DESCRIPTION
     BFLDDB BUILDS THE DEFAULT BUFFER FOR A FIELD. IT HAS TO
     TO PROPAGATE THE VALUE IN THE DEFAULT BUFFER FOR EACH ITEM
     OF AN ARRAY.

ARGUMENTS:
----------

  DP =        FIELD *
  TYPE =      CHAR
  TPP =       CHAR **


INCLUDE FILES:
--------------

  STDTYP      - STANDARD TYPE DEFINITIONS
  STDIO       - **** PURPOSE NOT FOUND BY STRIPPER ****
  CTYPE       - **** PURPOSE NOT FOUND BY STRIPPER ****
  FPD         - FORM PROCESSOR DATA
  FFFV2       - FORM FILE FORMAT - VERSION 2
  FPCODE      - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
----------------

  OPNFRM/BFLDDB - BUILD FIELD DEFAULT BUFFER
  MEMCPY
  BLEN
  SYSMSG      - SYSTEM MESSAGE ROUTINE
  MALLOC

CALLED DIRECTLY BY:
--------------------

   OPNFRM/BDBUFF - BUILD DEFAULT BUFFER
   OPNFRM/BFLDDB - BUILD FIELD DEFAULT BUFFER


USED IN MAIN PROGRAM(S):
--------------------------

   MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                  OPNFRM/BRPNOD
PURPOSE:               BUILD RELATIVE POSITION NODE
LANGUAGE:              C
MODULE TYPE:           FUNCTION
FUNCTION TYPE:         CHAR * ()
SOURCE FILE:           OPNFRM
SOURCE FILE TYPE:      .C
HOST:
SUBSYSTEM:             UI
SUBDIRECTORY:          FP
DOCUMENTATION GROUP:   FORMPROC


DESCRIPTION.
------------
  DESCRIPTION


ARGUMENTS:
----------
  FILE =      FILE *
  DP =        FIELD *


INCLUDE FILES:
--------------
  STDTYP     - STANDARD TYPE DEFINITIONS
  STDIO      - **** PURPOSE NOT FOUND BY STRIPPER ****
  CTYPE      - **** PURPOSE NOT FOUND BY STRIPPER ****
  FPD        - FORM PROCESSOR DATA
  FFFV2      - FORM FILE FORMAT - VERSION 2
  FPCODE     - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
----------------
  FERROR
  ABORT
  FNDFLD     - FIND FIELD
  STRASN
  SYSMSG     - SYSTEM MESSAGE ROUTINE
  MALLOC
  FREAD

CALLED DIRECTLY BY:
--------------------
  OPNFRM/PFREC - PROCESS FORM RECORD


USED IN MAIN PROGRAM(S):
-------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                   OPNFRM/BTBUFF
PURPOSE:                BUILD TEXT BUFFER
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          CHAR * ()
SOURCE FILE:            OPNFRM
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC


DESCRIPTION:
------------
  DESCRIPTION
      BTBUFF GETS TEXT INFORMATION FROM THE FORM DESCRIPTION
                     FILE
      AND USES IT TO BUILD THE TEXT BUFFER.


ARGUMENTS:
----------
  FILE =        FILE *
  FRP =         FRMREC *
  FP =          FIELD *


INCLUDE FILES:
--------------
  STDTYP       - STANDARD TYPE DEFINITIONS
  STDIO        - **** PURPOSE NOT FOUND BY STRIPPER ****
  CTYPE        - **** PURPOSE NOT FOUND BY STRIPPER ****
  FPD          - FORM PROCESSOR DATA
  FFFV2        - FORM FILE FORMAT - VERSION 2
  FPCODE       - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
----------------
  FERROR
  GETC
  ISCNTRL
  SYSMSG       - SYSTEM MESSAGE ROUTINE
  MALLOC

CALLED DIRECTLY BY:
----------------------
  OPNFRM/PFREC - PROCESS FORM RECORD


USED IN MAIN PROGRAM(S):
----------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                    OPNFRM/PARY
PURPOSE:                 PROCESS ARRAY
LANGUAGE:                C
MODULE TYPE:             FUNCTION
FUNCTION TYPE:           CHAR * ()
SOURCE FILE:             OPNFRM
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
------------

  DESCRIPTION
      PARY LOADS THE ARRAY INFORMATION FOR A FIELD FROM THE FORM
      DESCRIPTION FILE INTO THE ARYTYP DATA STRUCTURE IN FD.H.

ARGUMENTS:
----------

   DRP =        FLDREC *
   NDP =        FIELD **
   PP =        FIELD *
   FLDNAM =       NAME
   ROW =        INT
   COL =        INT
   LEVEL =        INT


INCLUDE FILES:
---------------

   STDTYP       - STANDARD TYPE DEFINITIONS
   STDIO        - **** PURPOSE NOT FOUND BY STRIPPER ****
   CTYPE        - **** PURPOSE NOT FOUND BY STRIPPER ****
   FPD          - FORM PROCESSOR DATA
   FFFV2        - FORM FILE FORMAT - VERSION 2
   FPCODE       - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
-----------------

   OPNFRM/PARY - PROCESS ARRAY
   ABS


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```
MAX
MAKFLD      - MAKE FIELD
GATDEF      - GET ATTRIBUTE DEFINITION
SYSMSG      - SYSTEM MESSAGE ROUTINE
OPNFRM/PWIN - PROCESS WINDOW
OPNFRM/PFRM - PROCESS FORM
OPNFRM/PITM - PROCESS ITEM
```

CALLED DIRECTLY BY:
-------------------

```
  OPNFRM/PDREC - PROCESS FIELD RECORD
  OPNFRM/PAR - PROCESS ARRAY
```

USED IN MAIN PROGRAM(S):
------------------------

```
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation

```
NAME:                   OPNFRM/PDREC
PURPOSE:                PROCESS FIELD RECORD
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          CHAR * ()
SOURCE FILE:            OPNFRM
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC
```

DESCRIPTION:
------------

  DESCRIPTION
      PDREC LOADS THE FIELD RECORDS FROM THE FORM DESCRIPTION
      INTO THE FIELD DATA STRUCTURE.

ARGUMENTS:
----------

```
  FILE =        FILE *
  FRP =         FRMREC *
  PP =          FIELD *
```

INCLUDE FILES:
--------------

```
  STDTYP      - STANDARD TYPE DEFINITIONS
  STDIO       - **** PURPOSE NOT FOUND BY STRIPPER ****
  CTYPE       - **** PURPOSE NOT FOUND BY STRIPPER ****
  FPD         - FORM PROCESSOR DATA
  FFFV2       - FORM FILE FORMAT - VERSION 2
  FPCODE      - FORM PROCESSOR RETURN CODES
```

ROUTINES CALLED:
----------------

```
  OPNFRM/PARY - PROCESS ARRAY
  ESCPY       - EXTERNAL STRING COPY
  SYSMSG      - SYSTEM MESSAGE ROUTINE
  FREAD
```

CALLED DIRECTLY BY:
--------------------
  OPNFRM/PFREC - PROCESS FORM RECORD


USED IN MAIN PROGRAM(S):
---------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation

NAME:                    OPNFRM/PFREC
PURPOSE:                 PROCESS FORM RECORD
LANGUAGE:                C
MODULE TYPE:             FUNCTION
FUNCTION TYPE:           CHAR * ()
SOURCE FILE:             OPNFRM
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
-------------

  DESCRIPTION
      PFREC LOADS THE FORM RECORDS FROM THE FORM DESCRIPTION
      FILE INTO THE FORM DATA STRUCTURE.

ARGUMENTS:
----------

   FILE =        FILE *
   DP =          FIELD **
   FNAME =       NAME


INCLUDE FILES:
---------------

   STDTYP       - STANDARD TYPE DEFINITIONS
   STDIO        - **** PURPOSE NOT FOUND BY STRIPPER ****
   CTYPE        - **** PURPOSE NOT FOUND BY STRIPPER ****
   FPD          - FORM PROCESSOR DATA
   FFFV2        - FORM FILE FORMAT - VERSION 2
   FPCODE       - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
----------------

   OPNFRM/BRPNOD - BUILD RELATIVE POSITION NODE
   OPNFRM/BDBUFF - BUILD DEFAULT BUFFER
   OPNFRM/BTBUFF - BUILD TEXT BUFFER
   OPNFRM/PDREC - PROCESS FIELD RECORD
   OPNFRM/PTREC - PROCESS TEXT RECORD
   MAKFLD       - MAKE FIELD

```
GATDEF      - GET ATTRIBUTE DEFINITION
STRCMP
ESCPY       - EXTERNAL STRING COPY
SYSMSG      - SYSTEM MESSAGE ROUTINE
FREAD
```

CALLED DIRECTLY BY:
--------------------
```
OPNFRM      - OPEN FORM
```

USED IN MAIN PROGRAM(S):
-------------------------
```
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation

NAME                    OPNFRM/PFRM
PURPOSE                 PROCESS FORM
LANGUAGE                C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          CHAR * ( )
SOURCE FILE:            OPNFRM
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC

DESCRIPTION
- - - - - - - - - - - -

  DESCRIPTION
      THIS ROUTINE IS USED IN THE SITUATION WHERE WE ENCOUNTER
      A FORM WITHIN A FORM. THE NEW FORM IS OPENED RECURSIVELY
      AND THEN COPIED TO THE APPROPRIATE PLACE IN THE CONTAINING
      FORM.

ARGUMENTS:
- - - - - - - - - -

    DRP =        FLDREC *
    NDP =        FIELD **
    PP =         FIELD *
    FLDNAM =        NAME
    ROW =        INT
    COL =        INT


INCLUDE FILES:
- - - - - - - - - - - - - -

    STDTYP      - STANDARD TYPE DEFINITIONS
    STDIO       - **** PURPOSE NOT FOUND BY STRIPPER ****
    CTYPE       - **** PURPOSE NOT FOUND BY STRIPPER ****
    FPD         - FORM PROCESSOR DATA
    FFFV2       - FORM FILE FORMAT - VERSION 2
    FPCODE      - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
- - - - - - - - - - - - - - - -

    COPFLD      - COPY FIELD

MAKFLD      - MAKE FIELD
SYSMSG      - SYSTEM MESSAGE ROUTINE
OPNFRM      - OPEN FORM
GOFPTR      - GET OPEN FROM POINTER


CALLED DIRECTLY BY:
--------------------
  OPNFRM/PAR - PROCESS ARRAY


USED IN MAIN PROGRAM(S):
-------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation

NAME:                   OPNFRM/PITM
PURPOSE:                PROCESS ITEM
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          CHAR * ()
SOURCE FILE:            OPNFRM
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC

DESCRIPTION:
------------
  DESCRIPTION
      PITM PROCESSES ITEM INFORMATION FROM THE FORM DESCRIPTION
      FILE PUTS IT INTO THE ITEM STRUCTURE IN FD.H.

ARGUMENTS:
----------
  DRP =         FLDREC *
  NDP =         FIELD **
  PP =        FIELD *
  FLDNAM =        NAME
  ROW =         INT
  COL =         INT


INCLUDE FILES:
--------------
  STDTYP      - STANDARD TYPE DEFINITIONS
  STDIO       - **** PURPOSE NOT FOUND BY STRIPPER ****
  CTYPE       - **** PURPOSE NOT FOUND BY STRIPPER ****
  FPD         - FORM PROCESSOR DATA
  FFFV2       - FORM FILE FORMAT - VERSION 2
  FPCODE      - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
----------------
  MEMCMP
  MEMCPY
  SYSMSG      - SYSTEM MESSAGE ROUTINE

```
MALLOC
STRLEN
MAKFLD     - MAKE FIELD
GATDEF     - GET ATTRIBUTE DEFINITION
ESCPY      - EXTERNAL STRING COPY
```

CALLED DIRECTLY BY:
--------------------

  OPNFRM/PAR - PROCESS ARRAY


USED IN MAIN PROGRAM(S):
-------------------------

  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                  OPNFRM/PTREC
PURPOSE:               PROCESS TEXT RECORD
LANGUAGE:              C
MODULE TYPE:           FUNCTION
FUNCTION TYPE:         CHAR * ()
SOURCE FILE:           OPNFRM
SOURCE FILE TYPE:      .C
HOST:
SUBSYSTEM:             UI
SUBDIRECTORY:          FP
DOCUMENTATION GROUP:   FORMPROC


DESCRIPTION:
--------------

  DESCRIPTION
      PTREC LOADS THE TEXT RECORDS FROM THE FORM DESCRIPTION
                          FILE
      INTO THE TEXT DATA STRUCTURE.


ARGUMENTS:
-----------

   FILE =        FILE *
   FRP =         FRMREC *
   FP =          FIELD *


INCLUDE FILES:
-----------------

   STDTYP      - STANDARD TYPE DEFINITIONS
   STDIO       - **** PURPOSE NOT FOUND BY STRIPPER ****
   CTYPE       - **** PURPOSE NOT FOUND BY STRIPPER ****
   FPD         - FORM PROCESSOR DATA
   FFFV2       - FORM FILE FORMAT - VERSION 2
   FPCODE      - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
-----------------------

   MALLOC
   SYSMSG      -  SYSTEM MESSAGE ROUTINE
   FREAD

CALLED DIRECTLY BY:
--------------------
    OPNFRM/PFREC - PROCESS FORM RECORD


USED IN MAIN PROGRAM(S):
--------------------------
    MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                OPNFRM/PWIN
PURPOSE:             PROCESS WINDOW
LANGUAGE:            C
MODULE TYPE:         FUNCTION
FUNCTION TYPE:       CHAR * ()
SOURCE FILE:         OPNFRM
SOURCE FILE TYPE:    .C
HOST:
SUBSYSTEM:           UI
SUBDIRECTORY:        FP
DOCUMENTATION GROUP: FORMPROC


DESCRIPTION:
------------

  DESCRIPTION
  PWIN GETS WINDOW INFORMATION FROM THE FORM DESCRIPTION FILE
  AND INSERTS IT INTO THE WINTYP DATA STRUCTURE IN FD.H.


ARGUMENTS:
----------

  DRP =        FLDREC *
  NDP =        FIELD **
  PP =        FIELD *
  FLDNAM =        NAME
  ROW =        INT
  COL =        INT



INCLUDE FILES:
--------------

  STDTYP      - STANDARD TYPE DEFINITIONS
  STDIO       - **** PURPOSE NOT FOUND BY STRIPPER ****
  CTYPE       - **** PURPOSE NOT FOUND BY STRIPPER ****
  FPD         - FORM PROCESSOR DATA
  FFFV2       - FORM FILE FORMAT - VERSION 2
  FPCODE      - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
----------------

  STRASN
  MAKFLD    -  MAKE FIELD
  GATDEF    -  GET ATTRIBUTE DEFINITION

ESCPY        - EXTERNAL STRING COPY


CALLED DIRECTLY BY:
--------------------
  OPNFRM/PAR - PROCESS ARRAY


USED IN MAIN PROGRAM(S):
------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                  OPNLDV
PURPOSE:               OPEN LOGICAL DEVICE
LANGUAGE:              C
MODULE TYPE:           FUNCTION
FUNCTION TYPE:         FORTRAN VOID ()
SOURCE FILE:           OPNLDV
SOURCE FILE TYPE:      .C
HOST:
SUBSYSTEM:             UI
SUBDIRECTORY:          FP
DOCUMENTATION GROUP:   FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
      FORTRAN VOID OPNLDV(LDWNID,RCODE)
          INT              *LDWNID;
          CHAR             RCODE[];


      INPUTS/OUTPUTS:


      INPUTS:
        ADDRESS OF:
                    LOGICAL DEVICES TOP WINDOW ID
                    RETURN CODE

      OUTPUTS:
        LDWNID - LOGICAL DEVICES TOP WINDOW ID
        RCODE  - RETURN CODE


  DESCRIPTION
      THIS MODULE OPENS A LOGICAL DEVICE. IF IT FAILS IT
                    RETURNS NFPDSTRC ERROR.

ARGUMENTS:
----------
  LDWNID =       INT *
  RCODE  =       CHAR []

INCLUDE FILES:
---------------
  STDTYP     - STANDARD TYPE DEFINITIONS
  FPD        - FORM PROCESSOR DATA
  FPCODE     - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
----------------
  STUPFP     - SET UP FORM PROCESSOR DATA STRUCTURES
  MAKFPD     - MAKE FORM PROCESSOR DATA (LOGICAL DEVICE
                     STRUCTURE)
  MEMCPY


CALLED DIRECTLY BY:
-------------------
  CALLFP     - CALL FP ROUTINES


USED IN MAIN PROGRAM(S):
------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                   OUTSCR
PURPOSE:                OUTPUT SCREEN
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          FORTRAN VOID ()
SOURCE FILE:            OISCR
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC

DESCRIPTION:
-----------
  SYNOPSIS
     FORTRAN VOID OUTSCR(PATH, CODEP)
        EPATH PATH;
        CHAR CODEP[];

     INPUTS:
        PATH - INPUT WINDOW PATH NAME - NOT USED

     OUTPUTS:
        CODEP - RETURN CODE

  DESCRIPTION
     DISPLAY ALL FORMS ON THE DISPLAY LIST.

ARGUMENTS:
----------
  PATH =        EPATH
  CODEP =       CHAR []


INCLUDE FILES:
--------------
  STDTYP      - STANDARD TYPE DEFINITIONS
  STDIO       - **** PURPOSE NOT FOUND BY STRIPPER ****
  CTYPE       - **** PURPOSE NOT FOUND BY STRIPPER ****
  TIME        - **** PURPOSE NOT FOUND BY STRIPPER ****
  FPD         - FORM PROCESSOR DATA
  FPCODE      - FORM PROCESSOR RETURN CODES
  FPPARM      - FORM PROCESSOR PARAMETERS

```
VTICOM     - VTI COMMUNICATION DEFINITIONS
FUNCTS     - FUNCTION DEFINITIONS
CTLCHR     - CONTROL CHARACTERS
```

ROUTINES CALLED:
----------------

```
MEMCPY
OISCR/FVTBUF - FILL VTI BUFFER
```

CALLED DIRECTLY BY:
-------------------

```
CALLFP     - CALL FP ROUTINES
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
UIS        - USR INTERFACE SERVICES
```

USED IN MAIN PROGRAM(S):
------------------------

```
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation

NAME:                    PARFQN
PURPOSE:                 PARSE FULLY QUALIFIED NAME
LANGUAGE:                C
MODULE TYPE:             SUBROUTINE
FUNCTION TYPE:           VOID ()
SOURCE FILE:             PARFQN
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
      FORTRAN VOID PARFQN(FQN,LSTFTP,LEVEL,PARNAM,PARTYP,RCODE)
          EPATH   FQN;
          CHAR    *LSTFTP;
          SHORT   *LEVEL;
          EPATH   PARNAM;
          CHAR    *PARTYP;
          CHAR    *RCODE;

      INPUTS:
          FQN    = FULLY QUALIFIED NAME TO BE PARSED.
          LSTFTP = TYPE OF THE LAST FIELD IN FULLY QUALIFIED NAME
          LEVEL  = LEVEL OF FIELD INTERESTED IN OBTAINING
                    0 = LAST LEVEL OF FULLY QUALIFIED NAME
                   -1 = FIRST FROM LAST LEVEL OF FULLY QUALIFIED
                        NAME
                   -2 = SECOND FROM LAST LEVEL OF FULLY QUALIFIED
                        NAME
                   ETC....
                    1 = FIRST LEVEL OF FULLY QUALIFIED NAME
                    2 = SECOND LEVEL OF FULLY QUALIFIED NAME
                   ETC....

      OUTPUTS:

          PARNAM = PARSED NAME
          PARTYP = TYPE OF THE FIELD WITH PARSED NAME
          RCODE  = RETURN CODE

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DESCRIPTION
PARFQN WILL RETURN THE NAME OF THE FIELD AND ITS TYPE AT A
SPECIFIED LEVEL OF A SPECIFIED FULLY QUALIFIED NAME GIVEN
THE TYPE OF THE LAST FIELD OF THIS FULLY QUALIFIED NAME.

ARGUMENTS:
----------

FQN =         EPATH
LSTFTP =        CHAR *
LEVEL =         SHORT *
PARNAM =        EPATH
PARTYP =        CHAR *
RCODE =         CHAR *


INCLUDE FILES:
--------------

STDTYP      - STANDARD TYPE DEFINITIONS
FPCODE      - FORM PROCESSOR RETURN CODES
FPD         - FORM PROCESSOR DATA


ROUTINES CALLED:
----------------

ESCPY       - EXTERNAL STRING COPY
STRCHR
MEMCPY
STRLEN
MEMSET
SYSMSG      - SYSTEM MESSAGE ROUTINE
STRRCHR


CALLED DIRECTLY BY:
-------------------

CALLFP      - CALL FP ROUTINES


USED IN MAIN PROGRAM(S):
------------------------

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                    PDATA
PURPOSE:                 PUT FORM DATA
LANGUAGE:                C
MODULE TYPE:             FUNCTION
FUNCTION TYPE:           FORTRAN VOID ()
SOURCE FILE:             PDATA
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
------------

   SYNOPSIS
      FORTRAN VOID PDATA(EWPATH, FDATA, CODEP)
         EPATH   EWPATH;
         CHAR    *FDATA;
         CHAR    CODEP[];

      INPUTS:
         EWPATH - PATH NAME
         FDATA  - PATH DATA

      OUTPUTS:
         CODEP - RETURN CODE

   DESCRIPTION
      USE PDATA TO PUT DATA ON A FORM, FIELD, ARRAY OR WINDOW.

ARGUMENTS:
----------

   EWPATH =        EPATH
   FDATA  =        CHAR *
   CODEP  =        CHAR []


INCLUDE FILES:
--------------

   STDTYP      - STANDARD TYPE DEFINITIONS
   CTYPE       - **** PURPOSE NOT FOUND BY STRIPPER ****
   FPD         - FORM PROCESSOR DATA

FPCODE        - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
----------------
  ESCPY        - EXTERNAL STRING COPY
  PTHPTR       - GET PATH POINTER
  PDATA/PUTBUF - PUT BUFFER
  MEMCPY


CALLED DIRECTLY BY:
-------------------
  CALLFP       - CALL FP ROUTINES
  OISCR/DSPSCR - DISPLAY SCREEN
  UIS          - USR INTERFACE SERVICES


USED IN MAIN PROGRAM(S):
------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                   PDATA/PUTBUF
PURPOSE:                PUT BUFFER
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          CHAR * ()
SOURCE FILE:            PDATA
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC

DESCRIPTION:
-------------

  DESCRIPTION
      PUTBUF PUTS DATA IN THE BUFFER AND UPDATES THE BUFFER
                        POINTER.

ARGUMENTS:
-----------

  DP =        FIELD *


INCLUDE FILES:
---------------

    STDTYP      - STANDARD TYPE DEFINITIONS
    CTYPE       - **** PURPOSE NOT FOUND BY STRIPPER ****
    FPD         - FORM PROCESSOR DATA
    FPCODE      - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
-----------------

    PDATA/PUTBUF - PUT BUFFER
    SYSMSG      - SYSTEM MESSAGE ROUTINE
    ISPRINT
    MEMCPY
    MEMCMP
    BLEN
    CBPTR


CALLED DIRECTLY BY:

------------------------

   PDATA/PUTBUF - PUT BUFFER
   PDATA       - PUT FORM DATA


USED IN MAIN PROGRAM(S):
---------------------------

   MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                    PDVOTP
PURPOSE:                 PUT DEVICE OUTPUT
LANGUAGE:                C
MODULE TYPE:             SUBROUTINE
FUNCTION TYPE:           VOID ()
SOURCE FILE:             PDVOTP
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC


DESCRIPTION:
------------

  SYNOPSIS
     VOID PDVOTP(PDPTR, BUFF, LEN)
         PD   *PDPTR;
         CHAR *BUFF;
         INT  LEN;

  INPUTS/OUTPUTS:

  INPUTS:
         PD     *PDPTR = POINTER TO DEVICE SENDING BUFF TO
         CHAR   *BUFF  = BUFFER SENDING TI VIRTUAL TERMINAL
         INT    LEN    = LENGTH OF THIS BUFFER

  OUTPUTS:
         NONE

  DESCRIPTION

         PDVOTP SENDS MESSAGES TO LOW LEVEL DRIVERS.

ARGUMENTS:
----------
  PDPTR =         PD *
  BUFF  =         CHAR *
  LEN   =         INT


INCLUDE FILES:

```
    --------------
  STDTYP      - STANDARD TYPE DEFINITIONS
  FPD         - FORM PROCESSOR DATA
  VTICOM      - VTI COMMUNICATION DEFINITIONS
  NTM         - NTM INTERFACE INCLUDE FILE
  FPCODE      - FORM PROCESSOR RETURN CODES
```

ROUTINES CALLED:
```
  ----------------
  MEMSET
  MEMCPY
  STRLEN
  FWRITE
  FCLOSE
  SYSMSG      - SYSTEM MESSAGE ROUTINE
  NSEND
  MEMCMP
```

CALLED DIRECTLY BY:
```
  -------------------
  GDVINP      - GET DEVICE INPUT
  MAKUSR      - MAKE USER
  OISCR/FVTBUF - FILL VTI BUFFER
  OISCR/PROCFLD - PROCESS FIELD
  OISCR/ADDCMD - ADD COMMAND TO BUFFER
  RMVFPD      - REMOVE FORM PROCESSOR DATA STRUCTURE
  UIS/PRCINP - PRCESS INPUT
  UIS         - USR INTERFACE SERVICES
```

USED IN MAIN PROGRAM(S):
```
  -------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation


NAME:                   PMSGLC
PURPOSE:                PUT MESSAGE LINE CODE
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          FORTRAN VOID ()
SOURCE FILE:            PMSGLC
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC


DESCRIPTION:
------------


  SYNOPSIS
     FORTRAN VOID PMSGLC(CODEP)
         CHAR    CODEP[];

     INPUTS:
        CODEP - RETURN CODE TO DISPLAY MESSAGE FOR

  DESCRIPTION
     PMSGLC MATCHES A PREDETERMINED MESSAGE WITH RCODE. IT THEN
     INSERTS THE MESSAGE INTO THE MESSAGE-LINE PORTION OF THE
     BUFFER SO THAT THE MESSAGE WILL BE DISPLAYED THE NEXT TIME
     A SCREEN IS SENT TO THE TERMINAL. FOLLOW THIS CALL WITH A
     CALL TO OUTSCR OR OISCR FOR IMMEDIATE TRANSMISSION.

ARGUMENTS:
----------
   CODEP =       CHAR []


INCLUDE FILES:
--------------
   STDTYP      - STANDARD TYPE DEFINITIONS
   FPD         - FORM PROCESSOR DATA


ROUTINES CALLED:
----------------
   FNDMSG      - FIND MESSAGE

PMSGLS     - PUT MESSAGE LINE STRING


CALLED DIRECTLY BY:
--------------------
  CALLFP      - CALL FP ROUTINES
  MONITR/MAI  - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
  INSCR       - INPUT SCREEN
  SYSMSG      - SYSTEM MESSAGE ROUTINE
  UIS/STRTAP  - START APPLICATION
  UIS         - USR INTERFACE SERVICES


USED IN MAIN PROGRAM(S):
--------------------------
  MONITR/MAI  - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                    PMSGLS
PURPOSE:                 PUT MESSAGE LINE STRING
LANGUAGE:                C
MODULE TYPE:             FUNCTION
FUNCTION TYPE:           FORTRAN VOID ()
SOURCE FILE:             PMSGLS
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC


DESCRIPTION:
------------

  SYNOPSIS
     FORTRAN VOID PMSGLS(MSGSTR)
        EMSG MSGSTR;

     INPUTS:
        MSGSTR - MESSAGE TO DISPLAY

  DESCRIPTION
     PMSGLS INSERTS MSG-STRING INTO THE MESSAGE-LINE PORTION
     OF THE BUFFER. THE MESSAGE-LINE WILL BE DISPLAYED THE
     NEXT TIME A SCREEN IS SENT TO THE TERMINAL. FOLLOW THIS
     CALL WITH A CALL TO OUTSCR OR OISCR FOR IMMEDIATE
                      TRANSMISSION.

ARGUMENTS:
----------

  MSGSTR =        EMSG


INCLUDE FILES:
--------------

   STDTYP      - STANDARD TYPE DEFINITIONS
   FPD         - FORM PROCESSOR DATA
   FPCODE      - FORM PROCESSOR RETURN CODES
   CTYPE       - **** PURPOSE NOT FOUND BY STRIPPER ****


ROUTINES CALLED:

```
----------------
  MALLOC
  FUISWN      - FIND UIS WINDOW
  ESCPY       - EXTERNAL STRING COPY
  STRLEN
  MEMSET
  ISPRINT
```

CALLED DIRECTLY BY:
```
-------------------
  CALLFP      - CALL FP ROUTINES
  PMSGLC      - PUT MESSAGE LINE CODE
  RMVAP       - REMOVE APPLICATION
  UIS/STRTAP  - START APPLICATION
  UIS/STRTPD  - START PHYSICAL DEVICE
  UIS/PRCWND  - PRCESS WINDOW
  UIS         - USR INTERFACE SERVICES
```

USED IN MAIN PROGRAM(S):
```
--------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation


NAME:                    POSCUR
PURPOSE:                 POSITION CURSOR
LANGUAGE:                C
MODULE TYPE:             SUBROUTINE
FUNCTION TYPE:           VOID ()
SOURCE FILE:             POSCUR
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC


DESCRIPTION:
------------

  SYNOPSIS
     VOID POSCUR(DP,RELPOS,ABSPOS)
        REGISTER FIELD *DP;
        POSITION        *RELPOS;
        POSITION        *ABSPOS;


     INPUTS/OUTPUTS:


     INPUTS:
        DP - FIELD WHOSE ROW AND COL WANT TO ABSOLUTIZED
        STRUCTURE CONTAINING:
                           RELATIVE ROW OF FIELD
                           RELATIVE COL OF FIELD
     OUTPUTS:
        POSITION OF CURSOR

  DESCRIPTION
     THIS MODUL CALUCULATES ABSOLUTE CURSOR FOR INSERTING INTO
                       OUTCUR. GOING
     UP CHILD PARENT TREE AND ADDING EACH SUCCESSIVE PARENT'S
                       ROW AND COL
     TO SUM OF CHILDS'. CLIPPING POSITION TO BOUNDS OF PARENT
                       WINDOW.


ARGUMENTS:
----------

```
DP  =        FIELD *
RELPOS =        POSITION *
ABSPOS =        POSITION *
```

INCLUDE FILES:
----------------

```
STDTYP     - STANDARD TYPE DEFINITIONS
FPD        - FORM PROCESSOR DATA
```

ROUTINES CALLED:
----------------

```
POSCUR/FNFITM - FIND FIRST ITEM OF FIELD
MAX
MIN
```

CALLED DIRECTLY BY:
--------------------

```
OISCR/PROCFLD - PROCESS FIELD
PUTCUR     - PUT CURSOR
PUTLOC     - PUT LOCATION
RMVFPD     - REMOVE FORM PROCESSOR DATA STRUCTURE
```

USED IN MAIN PROGRAM(S):
----------------------------

```
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation


NAME:                   POSCUR/FNFITM
PURPOSE:                FIND FIRST ITEM OF FIELD
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          FIELD * ()
SOURCE FILE:            POSCUR
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC


DESCRIPTION:
------------

  SYNOPSIS
      STATIC FIELD *FNFITM(DP)
        REGISTER FIELD *DP;


      INPUTS/OUTPUTS:


      INPUTS:
        DP - FIELD WHOSE A POITER TO WHOSE FIRST ITEM IS DESIRED
      OUTPUTS:
          POINTER TO FIRST INPUT ITEM OF FIELDS CHILDREN IF ANY
                        OTHERWISE A NULL

  DESCRIPTION
      THIS MODUL FINDS THE THE FIEST ITEM OF A FIELD IF ANY

ARGUMENTS:
----------

    DP =        FIELD *


INCLUDE FILES.
- - - - - - -  - - - -

    STDTYP      - STANDARD TYPE DEFINITIONS
    FPD         - FORM PROCESSOR DATA


ROUTINES CALLED:

--------------------

POSCUR/FNFITM - FIND FIRST ITEM OF FIELD


CALLED DIRECTLY BY:
--------------------
  POSCUR        - POSITION CURSOR
  POSCUR/FNFITM - FIND FIRST ITEM OF FIELD


USED IN MAIN PROGRAM(S):
---------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                     PRNAP
PURPOSE:                  PRINT APLICATION
LANGUAGE:                 C
MODULE TYPE:              SUBROUTINE
FUNCTION TYPE:            VOID ()
SOURCE FILE:              PRNFLD
SOURCE FILE TYPE:         .C
HOST:
SUBSYSTEM:                UI
SUBDIRECTORY:             FP
DOCUMENTATION GROUP:      FORMPROC


DESCRIPTION:
--------------

  DESCRIPTION
     FOR DEBUGGING:
         PRINTS INFO FROM AP STURCTURE USING FPD POINTER


ARGUMENTS:
-----------

  FPD =          FPD *


INCLUDE FILES:
----------------

   STDTYP      - STANDARD TYPE DEFINITIONS
   FPD         - FORM PROCESSOR DATA
   STDIO       - **** PURPOSE NOT FOUND BY STRIPPER ****


ROUTINES CALLED:
------------------

   PRINTF


CALLED DIRECTLY BY:
---------------------

   PRNPD       - PRINT PHYSICAL DEVICE
   PRNUSR      - PRINT USER
   PRNUID      - PRINT UID


USED IN MAIN PROGRAM(S):

------------------------------

```
PRNUID      - PRINT UID
PRNUSR      - PRINT USER
```

FORM PROCESSOR Module Documentation


NAME:                   PRNDSP
PURPOSE:                PRINT DISPLAY LIST
LANGUAGE:               C
MODULE TYPE:            SUBROUTINE
FUNCTION TYPE:          VOID ( )
SOURCE FILE:            PRNFLD
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC


DESCRIPTION:
- - - - - - - - - - -

   DESCRIPTION
      FOR DEBUGGING:
         PRINTS A DISPLAY LIST CALLS PRNFLD WITH DSPLST


INCLUDE FILES:
- - - - - - - - - - - -

   STDTYP      - STANDARD TYPE DEFINITIONS
   FPL         - FORM PROCESSOR DATA
   STDIO       - **** PURPOSE NOT FOUND BY STRIPPER ****


ROUTINES CALLED:
- - - - - - - - - - -

   PRNFLD      - PRINT FIELD

FORM PROCESSOR Module Documentation


NAME:                   PRNFLD
PURPOSE:                PRINT FIELD
LANGUAGE:               C
MODULE TYPE:            SUBROUTINE
FUNCTION TYPE:          VOID ()
SOURCE FILE:            PRNFLD
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC


DESCRIPTION:
- - - - - - - - - - - -

   SYNOPSIS
      PRNFLD(DP,CHLDFLG)
         FIELD *DP;
         BOOL   CHLDFLG;
      INPUTS:
         DP        - POINTER TO FIRST FIELD TO PRINT
         CHLDFLG - FLAG - WHETHER WANT TO LOOK AT CHILDREN OR
                        NOT

   DESCRIPTION
      FOR DEBUGGING:
         PRINTS A FIELD AND ITS CONTENTS FOLLOWED BY ITS NEXT
                        FIELD, ETC.

ARGUMENTS:
- - - - - - - - - - -
   DP =           FIELD *
   CHLDFLG =          BOOL


INCLUDE FILES:
- - - - - - - - - - - - - -
   STDTYP      - STANDARD TYPE DEFINITIONS
   FPD         - FORM PROCESSOR DATA
   STDIO       - **** PURPOSE NOT FOUND BY STRIPPER ****


ROUTINES CALLED:

----------------------------

```
PRNFLD     - PRINT FIELD
DOWIND
DOITEM
DOATTR
PRINTF
```

CALLED DIRECTLY BY:

----------------------

```
PRNFLD     - PRINT FIELD
PRNDSP     - PRINT DISPLAY LIST
PRNOPN     - PRINT OPEN LIST
```

USED IN MAIN PROGRAM(S):

----------------------------

```
PRNDSP     - PRINT DISPLAY LIST
PRNOPN     - PRINT OPEN LIST
```

FORM PROCESSOR Module Documentation


NAME:                   PRNOPN
PURPOSE:                PRINT OPEN LIST
LANGUAGE:               C
MODULE TYPE:            SUBROUTINE
FUNCTION TYPE:          VOID ()
SOURCE FILE:            PRNFLD
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC

DESCRIPTION:
------------

  DESCRIPTION
     FOR DEBUGGING:
        PRINTS A OPEN LIST CALLS PRNFLD WITH OPNLST


INCLUDE FILES:
--------------

   STDTYP       - STANDARD TYPE DEFINITIONS
   FPD          - FORM PROCESSOR DATA
   STDIO        - **** PURPOSE NOT FOUND BY STRIPPER ****


ROUTINES CALLED:
----------------

   PRNFLD       - PRINT FIELD

FORM PROCESSOR Module Documentation


NAME:                   PRNPD
PURPOSE:                PRINT PHYSICAL DEVICE
LANGUAGE:               C
MODULE TYPE:            SUBROUTINE
FUNCTION TYPE:          VOID ()
SOURCE FILE:            PRNFLD
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC

DESCRIPTION:
-------------

  DESCRIPTION
    FOR DEBUGGING:
      PRINTS INFO FROM PD STURCTURE USING PD POINTER

ARGUMENTS:
-----------

  PD =         PD *


INCLUDE FILES:
---------------

  STDTYP        - STANDARD TYPE DEFINITIONS
  FPD           - FORM PROCESSOR DATA
  STDIO         - **** PURPOSE NOT FOUND BY STRIPPER ****


ROUTINES CALLED:
-----------------

  PRNAP         - PRINT APLICATION
  PRINTF


CALLED DIRECTLY BY:
--------------------

  PRNUSR        - PRINT USER
  PRNUID        - PRINT UID


USED IN MAIN PROGRAM(S):

```
------------------------
PRNUID     - PRINT UID
PRNUSR     - PRINT USER
```

FORM PROCESSOR Module Documentation


NAME:                    PRNUID
PURPOSE:                 PRINT UID
LANGUAGE:                C
MODULE TYPE:             SUBROUTINE
FUNCTION TYPE:           VOID ()
SOURCE FILE:             PRNFLD
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
------------

  DESCRIPTION
    FOR DEBUGGING:
      PRINTS UID INFO & CALLS PRNAP AND PRNPD FOR ALL AP AN PD
                        ON UIS AP
      AND PD LIST


INCLUDE FILES:
---------------

  STDTYP      - STANDARD TYPE DEFINITIONS
  FPD         - FORM PROCESSOR DATA
  STDIO       - **** PURPOSE NOT FOUND BY STRIPPER ****


ROUTINES CALLED:
-----------------

  PRINTF
  PRNPD       - PRINT PHYSICAL DEVICE
  PRNAP       - PRINT APLICATION

FORM PROCESSOR Module Documentation


NAME:                   PRNUSR
PURPOSE:                PRINT USER
LANGUAGE:               C
MODULE TYPE:            SUBROUTINE
FUNCTION TYPE:          VOID ()
SOURCE FILE:            PRNFLD
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC

DESCRIPTION:
------------

  DESCRIPTION
      FOR DEBUGGING:
        PRINTS USER INFO & CALLS PRNAP AND PRNPD FOR ALL AP AN
                  PD FOR ALL USERS


INCLUDE FILES:
--------------

  STDTYP      - STANDARD TYPE DEFINITIONS
  FPD         - FORM PROCESSOR DATA
  STDIO       - **** PURPOSE NOT FOUND BY STRIPPER ****


ROUTINES CALLED:
----------------

  PRNPD       - PRINT PHYSICAL DEVICE
  PRNAP       - PRINT APLICATION
  PRINTF

FORM PROCESSOR Module Documentation

NAME:                    PTHPTR
PURPOSE:                 GET PATH POINTER
LANGUAGE:                C
MODULE TYPE:             FUNCTION
FUNCTION TYPE:           CHAR * ()
SOURCE FILE:             PTHPTR
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
     CHAR *PTHPTR(PATH, PTHPP, TOPFLD)
         PATH   PATH;
         FIELD **PTHPP;
         FIELD *TOPFLD;

    INPUTS:
        PATH - PATH TO GET POINTER TO
        TOPFLD - POINTER TO FIRST FIELD TO SEARCH FOR PATH

    OUTPUTS:
        PTHPP - ADDRESS OF POINTER TO SET

  DESCRIPTION
      PARSES A QUALIFIED NAME PASSED AS A CHARACTER STRING IN
                        PATH,
      DETERMINES WHICH FIELD THIS NAME INDICATES AND RETURNS A
                        POINTER
      TO THAT FIELD IN THE DISPLAY LIST AS A PARAMETER.
      PTHPTR RETURNS A NULL IF SUCCESSFUL ELSE RETURNS A POINTER
      TO AN ERROR CODE.

      THE METHOD IS TO FORM A LIST OF ELEMENTS. ONE ELEMENT FOR
                        EACH
      QUALIFIER IN THE QUALIFIED NAME. THE FORM HIERARCHY IS
                        SEARCHED
      BY CHECKING IF A QUALIFIER MATCHES A FIELD NAME AT THE
                        CURRENT

LEVEL AND A LOWER LEVEL. DEPENDING ON THE FIELD TYPE,
PROCESSING
WILL BE DONE FOR AN ARRAY, ITEM, FORM OR WINDOW. FIELD
NAME
MATCHING AND FIELD TYPE PROCESSING REPEATS UNTIL THE END
OF THE
ELEMENT LIST IS REACHED. AT THIS POINT PROCEDURE FOUND
DETERMINES
IF A FIELD HAS ACTUALLY BEEN LOCATED.

ARGUMENTS:
- - - - - - - - - - -
```
  PATH =        PATH
  PTHPP =        FIELD **
  TOPFLD =       FIELD *
```

INCLUDE FILES:
- - - - - - - - - - - - - -
```
  STDTYP     - STANDARD TYPE DEFINITIONS
  FPCODE     - FORM PROCESSOR RETURN CODES
  FPD        - FORM PROCESSOR DATA
  CTYPE      - **** PURPOSE NOT FOUND BY STRIPPER ****
```

ROUTINES CALLED:
- - - - - - - - - - - - - - - - -
```
  MALLOC
  STRASN
  ISDIGIT
  SYSMSG       - SYSTEM MESSAGE ROUTINE
  PTHPTR/FIELD - MATCH FIELD
  FREE
  ISALNUM
  TOUPPER
```

CALLED DIRECTLY BY:
- - - - - - - - - - - - - - - - - - - -
```
  ADDELM     - ADD ELEMENT
  ADDFRM     - ADD FORM TO WINDOW
  GDATA      - GET DATA
  GDATLN     - GET DATA LENGTH
  GETATT     - GET ATTRIBUTE
  GETBAK     - GET BACKGROUND ATTRIBUTE
  GPAGE      - GET PAGE
  GWINDO     - GET WINDOW
```

```
ONWISC      - OUTPUT (NO WAIT) / INPUT SCREEN
PDATA       - PUT FORM DATA
PUTATT      - PUT ATTRIBUTES
PUTBAK      - PUT  BACKGROUND ATTRIBUTES
PUTCUR      - PUT CURSOR
PUTLOC      - PUT LOCATION
RMVPAG      - REMOVE PAGE
RPLFRM      - REPLACE FORM
RSVEXP/BLDEXP - BUILD EXPRESSION TREE
```

USED IN MAIN PROGRAM(S):
--------------------------

```
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation

NAME:                    PTHPTR/ARRAY
PURPOSE:                 PROCESS ARRAY
LANGUAGE:                C
MODULE TYPE:             FUNCTION
FUNCTION TYPE:           INT ()
SOURCE FILE:             PTHPTR
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
------------

  DESCRIPTION
      PROCESS ARRAYS. IF THE SUBELEMENT IS SPECIFIED THEN ONLY
      THAT ELEMENT IS SEARCHED, ELSE ALL SUBELEMENTS ARE
      SEARCHED.

ARGUMENTS:
----------

  PATH =          ELEMENT *
  PASS_PATH =         ELEMENT *
  FLDPTR =        FIELD *
  LEVEL =         INT
  FIRST_LEV =         INT


INCLUDE FILES:
--------------

  STDTYP      - STANDARD TYPE DEFINITIONS
  FPCODE      - FORM PROCESSOR RETURN CODES
  FPD         - FORM PROCESSOR DATA
  CTYPE       - **** PURPOSE NOT FOUND BY STRIPPER ****


ROUTINES CALLED:
----------------

  PTHPTR/FIELD - MATCH FIELD
  PTHPTR/FOUND - HAS ANYTHING BEEN FOUND?


CALLED DIRECTLY BY:

---

PTHPTR/FIELD - MATCH FIELD


USED IN MAIN PROGRAM(S):

---

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                   PTHPTR/FIELD
PURPOSE:                MATCH FIELD
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          INT ()
SOURCE FILE:            PTHPTR
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP: FORMPROC


DESCRIPTION:
-------------

  DESCRIPTION
      PROCESS FIELDS BY ATTEMPTING TO MATCH THE CURRENT NAME
      IN PATH WITH THE NAME IN FLDPTR.  IN THIS AND THE
                        FOLLOWING
      PROEDURES:
          PATH - THE QUALIFIER TO USE AT THIS LEVEL
          PASS_PATH - THE QUALIFIERS TO USE AT LOWER LEVELS
          WHEN PATH==NULL: END OF ELEMENT CHAIN
          WHEN PATH==PASS_PATH: NO QUALIFIER IN THE CHAIN ELEMENT
                              IS ASSOCIATED WITH THIS LEVEL
          FLDPTR - POINTER TO FIELD IN THE HIERARCHY
          LEVEL - THE LEVEL NUMBER OF THE FIELD INDICATED BY
                        FLDPTR
          FIRST_LEV - THE FIRST LEVEL AT WHICH A QUALIFIER
                              IN THE ELEMENT CHAIN MATCHED A FIELD
                        NAME

ARGUMENTS:
----------

  PATH =          ELEMENT *
  FLDPTR =          FIELD *
  LEVEL =         INT
  FIRST_LEV =        INT


INCLUDE FILES:
--------------

  STDTYP      - STANDARD TYPE DEFINITIONS
  FPCODE      - FORM PROCESSOR RETURN CODES

```
FPD        - FORM PROCESSOR DATA
CTYPE      - **** PURPOSE NOT FOUND BY STRIPPER ****
```

ROUTINES CALLED:
-------------------

```
  PTHPTR/ITEM - PROCESS ITEM
  PTHPTR/WINDOW - PROCESS WINDOW
  PTHPTR/FORM - PROCESS FORM
  MIN
  PTHPTR/ARRAY - PROCESS ARRAY
  STRCMP
```

CALLED DIRECTLY BY:
---------------------

```
  PTHPTR/ARRAY - PROCESS ARRAY
  PTHPTR/FOR - PROCESS FORM
  PTHPTR/WINDOW - PROCESS WINDOW
  PTHPTR      - GET PATH POINTER
```

USED IN MAIN PROGRAM(S):
----------------------------

```
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation


NAME:                   PTHPTR/FORM
PURPOSE:                PROCESS FORM
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          INT ()
SOURCE FILE:            PTHPTR
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC


DESCRIPTION:
------------

  DESCRIPTION
      PROCESS FORMS. LOOK AT ALL SUB FIELDS OF A FORM.


ARGUMENTS:
----------

  PATH =          ELEMENT *
  PASS_PATH =         ELEMENT *
  FLDPTR =          FIELD *
  LEVEL =         INT
  FIRST_LEV =         INT


INCLUDE FILES:
--------------

  STDTYP      - STANDARD TYPE DEFINITIONS
  FPCODE      - FORM PROCESSOR RETURN CODES
  FPD         - FORM PROCESSOR DATA
  CTYPE       - **** PURPOSE NOT FOUND BY STRIPPER ****


ROUTINES CALLED:
----------------

  PTHPTR/FIELD - MATCH FIELD
  PTHPTR/FOUND - HAS ANYTHING BEEN FOUND?


CALLED DIRECTLY BY:
-------------------

  PTHPTR/FIELD - MATCH FIELD


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USED IN MAIN PROGRAM(S):
--------------------------

  MONITR MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                    PTHPTR/FOUND
PURPOSE:                 HAS ANYTHING BEEN FOUND?
LANGUAGE:                C
MODULE TYPE:             FUNCTION
FUNCTION TYPE:           INT ()
SOURCE FILE:             PTHPTR
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC


DESCRIPTION:
------------

  DESCRIPTION
      DETERMINE IF A FIELD HAS BEEN LOCATED. FOR A FIELD TO BE
      LOCATED THE PATH NAME MUST BE THE LAST NAME ON THE ELEMENT
      LIST AND MATCH THE FIELD'S NAME. ITS FIRST LEVEL MUST BE
      LESS THAN OR EQUAL TO ANY OTHERS CURRENTLY "FOUND". IF THE
      FIRST LEVELS ARE EQUAL THEN IT MUST HAVE A SHORTER LENGTH
      PATH.

      ******************** WARNING ****************************
      *    DUE TO AN ANOMOLY IN WINDOWS A PATH NAME THAT ENDS   *
      *                   ...WINDOW‹N›;                         *
      *    WILL CAUSE PATH_PTR TO BE SET IN PROCEDURE WINDOW    *
      *    TO THE NTH FORM IN THE WINDOW INSTEAD OF HERE IN     *
      *    PROCEDURE FOUND. IN ADDITION LEVEL IS INCREMENTED    *
      *    IN PROCEDURE WINDOW BEFORE THE CALL TO FOUND.        *

ARGUMENTS:
-----------

  PATH =          ELEMENT *
  PASS_PATH =         ELEMENT *
  FLDPTR =          FIELD *
  LEVEL =         INT
  FIRST_LEV =         INT


INCLUDE FILES:
---------------

  STDTYP       - STANDARD TYPE DEFINITIONS
  FPCODE       - FORM PROCESSOR RETURN CODES
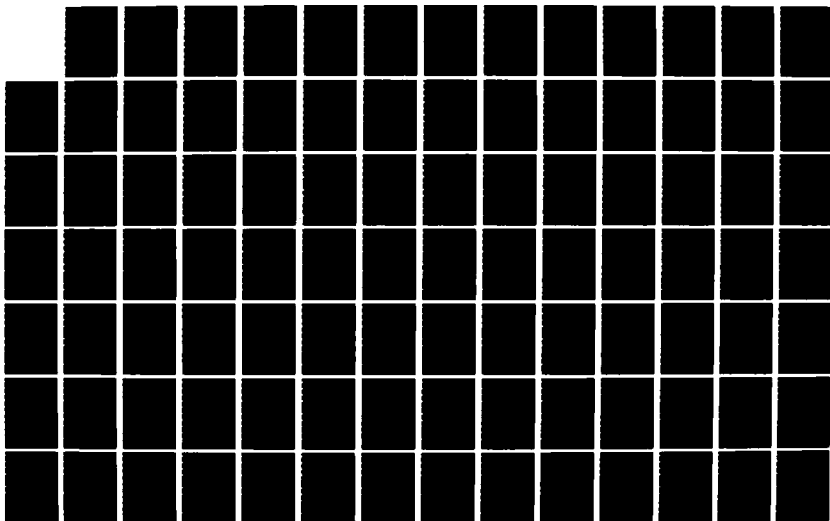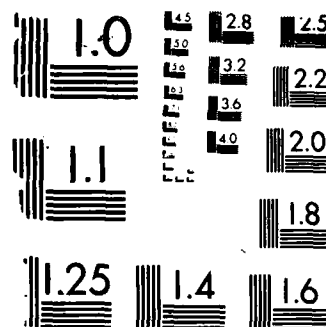
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963 A

FPD        - FORM PROCESSOR DATA
CTYPE      - **** PURPOSE NOT FOUND BY STRIPPER ****


ROUTINES CALLED:
-------------------
  STRCMP


CALLED DIRECTLY BY:
----------------------
  PTHPTR/ARRAY - PROCESS ARRAY
  PTHPTR/FOR - PROCESS FORM
  PTHPTR/ITE - PROCESS ITEM
  PTHPTR/WINDOW - PROCESS WINDOW


USED IN MAIN PROGRAM(S):
----------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation

NAME:                    PTHPTR/ITEM
PURPOSE:                 PROCESS ITEM
LANGUAGE:                C
MODULE TYPE:             FUNCTION
FUNCTION TYPE:           INT ()
SOURCE FILE:             PTHPTR
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
--------------

  DESCRIPTION
      PROCESS ITEMS

ARGUMENTS:
-----------

  PATH =         ELEMENT *
  PASS_PATH =        ELEMENT *
  FLDPTR =          FIELD *
  LEVEL =        INT
  FIRST_LEV =        INT


INCLUDE FILES:
----------------

  STDTYP        - STANDARD TYPE DEFINITIONS
  FPCODE        - FORM PROCESSOR RETURN CODES
  FPD           - FORM PROCESSOR DATA
  CTYPE         - **** PURPOSE NOT FOUND BY STRIPPER ****


ROUTINES CALLED:
------------------

  PTHPTR/FOUND - HAS ANYTHING BEEN FOUND?


CALLED DIRECTLY BY:
---------------------

  PTHPTR/FIELD - MATCH FIELD

USED IN MAIN PROGRAM(S):
---------------------------

   MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                    PTHPTR/WINDOW
PURPOSE:                 PROCESS WINDOW
LANGUAGE:                C
MODULE TYPE:             FUNCTION
FUNCTION TYPE:           INT ()
SOURCE FILE:             PTHPTR
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC


DESCRIPTION:
------------

    DESCRIPTION
        PROCESS WINDOWS.  IF PAGE NUMBER IS UNSPECIFIED THE
        TOP PAGE IS ASSUMED.


ARGUMENTS:
-----------

    PATH =          ELEMENT *
    PASS_PATH =         ELEMENT *
    FLDPTR =         FIELD *
    LEVEL =         INT
    FIRST_LEV =         INT


INCLUDE FILES:
---------------

    STDTYP        - STANDARD TYPE DEFINITIONS
    FPCODE        - FORM PROCESSOR RETURN CODES
    FPD           - FORM PROCESSOR DATA
    CTYPE         - **** PURPOSE NOT FOUND BY STRIPPER ****


ROUTINES CALLED:
-----------------

    PTHPTR/FIELD - MATCH FIELD
    PTHPTR/FOUND - HAS ANYTHING BEEN FOUND?


CALLED DIRECTLY BY:
-------------------

PTHPTR/FIELD - MATCH FIELD

USED IN MAIN PROGRAM(S):
---------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                    PUTATT
PURPOSE:                 PUT ATTRIBUTES
LANGUAGE:                C
MODULE TYPE:             FUNCTION
FUNCTION TYPE:           FORTRAN VOID ()
SOURCE FILE:             PUTATT
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
------------

   SYNOPSIS
      FORTRAN VOID PUTATT(EWPATH, DUR, EATTRB, RCODE)
         EPATH   EWPATH;
         SHORT   *DUR;
         ENAME   EATTRB;
         CHAR    RCODE[];

      INPUTS:
         EWPATH = PATH TO FIELD POINTER CONTAINING ITEM
                     CONCERNED
         DUR    = DURATION OF ATRIBUTE
                     (BACKGROUND/PERMINATE/TEMPORARY)
                  TO BE PUT IN
         EATTRB = ATTRIBUTE TO BE PUT IN

      OUTPUTS:
         RCODE = RETURN CODE INDICATING WHETHER OPERATION WAS
                   SUCCESSFUL OR NOT (AND WHY NOT).

   DESCRIPTION
      THIS ROUTINE PUTS IN THE ATTRIBUTE IDENTIFIER FOR FIELDS
      IF DUR IS PERM OR TEMP THEN ALL ITEMS IN WINDOW OR FORM
                     SPECIFIED
      OR THE ITEM ITSELF IF IT IS SPECIFIED WILL HAVE THEIR
                     (ITS) PERM.
      OR TEMP. ATTRIBUTE SET TO ATTRIBUTE SPECIFIED.

ARGUMENTS:

```
----------
  EWPATH =        EPATH
  DUR =           SHORT *
  EATTRB =        ENAME
  RCODE =         CHAR [ ]
```

INCLUDE FILES:
```
--------------
  STDTYP      - STANDARD TYPE DEFINITIONS
  FPD         - FORM PROCESSOR DATA
  FPCODE      - FORM PROCESSOR RETURN CODES
  FPPARM      - FORM PROCESSOR PARAMETERS
```

ROUTINES CALLED:
```
----------------
  ESCPY       - EXTERNAL STRING COPY
  SYSMSG      - SYSTEM MESSAGE ROUTINE
  PTHPTR      - GET PATH POINTER
  PUTATT/AABSAT - ATTRIBUTE ABSOLUTE SET ATTRIBUTE
  MEMCPY
  GATDEF      - GET ATTRIBUTE DEFINITION
```

CALLED DIRECTLY BY:
```
-------------------
  CALLFP      - CALL FP ROUTINES
  UIS/FLWNST - FILL WINDOW MANAGER STRUCTURE
```

USED IN MAIN PROGRAM(S):
```
------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation


NAME:                    PUTATT/AABSAT
PURPOSE:                 ATTRIBUTE ABSOLUTE SET ATTRIBUTE
LANGUAGE:                C
MODULE TYPE:             SUBROUTINE
FUNCTION TYPE:           VOID ()
SOURCE FILE:             PUTATT
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
      STATIC VOID AABSAT(DP, DUR, ATTRBT)

      INPUTS:
          DP      = FIELD POINTER TO FIELD STUCTURE TO BE
                      PROCESSED
          DUR     = DURATION OF ATRIBUTE
                      (FORGROUND(PERMINATE/TEMPORARY
                    ATTRIBUTE)/BACKGROUND) TO BE PUT IN
          ATTRB   = ATTRIBUTE TO BE PUT IN

  DESCRIPTION
      THIS ROUTINE ABSOLUTIZES AN ATTRIBUTE NAME RELATIVE TO
      THE ABSOLUTE ATTRIBUTE OF THE ELEMENT THAT CONTAINS IT
      (BACKGROUND ATTRIBUTE). THE ATTRIBUTES OF ALL SUBORDINATE
      NODES IN THE TREE ARE LIKEWISE ADJUSTED.

  ARGUMENTS:
  ----------

    DP    =      FIELD *
    DUR   =      SHORT *
    ATTRBT =     ATTMAP *


  INCLUDE FILES:
  --------------

    STDTYP      - STANDARD TYPE DEFINITIONS
    FPD         - FORM PROCESSOR DATA
    FPCODE      - FORM PROCESSOR RETURN CODES

FPPARM      - FORM PROCESSOR PARAMETERS

ROUTINES CALLED:
-----------------
  PUTATT/AABSAT - ATTRIBUTE ABSOLUTE SET ATTRIBUTE
  MABSAT      - MAP ABSOLUTE ATTRIBUTE

CALLED DIRECTLY BY:
--------------------
  PUTATT/AABSAT - ATTRIBUTE ABSOLUTE SET ATTRIBUTE
  PUTATT      - PUT ATTRIBUTES

USED IN MAIN PROGRAM(S):
------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation

```
NAME:                 PUTBAK
PURPOSE:              PUT  BACKGROUND ATTRIBUTES
LANGUAGE:             C
MODULE TYPE:          FUNCTION
FUNCTION TYPE:        FORTRAN VOID ()
SOURCE FILE:          PUTBAK
SOURCE FILE TYPE:     .C
HOST:
SUBSYSTEM:            UI
SUBDIRECTORY:         FP
DOCUMENTATION GROUP:  FORMPROC
```

DESCRIPTION:
------------

```
  SYNOPSIS
      FORTRAN VOID PUTBAK(EWPATH, DUR, EATTRB, RCODE)
          EPATH   EWPATH;
          SHORT   *DUR;
          ENAME   EATTRB;
          CHAR    RCODE[];

      INPUTS:
          EWPATH = PATH TO FIELD POINTER CONTAINING ITEM
                     CONCERNED
          DUR    = DURATION OF ATRIBUTE (PERMINATE/TEMPORARY)
                     TO BE PUT IN
          EATTRB = ATTRIBUTE TO BE PUT IN

      OUTPUTS:
          RCODE = RETURN CODE INDICATING WHETHER OPERATION WAS
                    SUCCESSFUL OR NOT (AND WHY NOT).

  DESCRIPTION
          THIS ROUTINE PUTS IN THE ATTRIBUTE IDENTIFIER FOR FIELDS
          IF DUR IS PERM THEN ATRIBUTE IS PUT INTO PERMINANT
                    ATTRIBUTE
          AND ALL FIELDS AFFECTED BY ITS ATTRIBUTE AR ADJUSTED.
                    IF DUR IS
          TEMP THEN IN ADDITION TO COPYING ATTRIBUTE INTO
                    PERNINANT ATTRIBUTE
          ETC. THE CURENT ATTRIBUTE AND CURRENT DP ARE SAVED
                    BEING RESTORED
```

AT THE END OF OISCR.

ARGUMENTS:
----------

  EWPATH =      EPATH
  DUR =         SHORT *
  EATTRB =      ENAME
  RCODE =       CHAR [ ]


INCLUDE FILES:
--------------

  STDTYP    - STANDARD TYPE DEFINITIONS
  FPD       - FORM PROCESSOR DATA
  FPCODE    - FORM PROCESSOR RETURN CODES
  FPPARM    - FORM PROCESSOR PARAMETERS


ROUTINES CALLED:
----------------

  ESCPY     - EXTERNAL STRING COPY
  GATDEF    - GET ATTRIBUTE DEFINITION
  SYSMSG    - SYSTEM MESSAGE ROUTINE
  MEMCPY
  PTHPTR    - GET PATH POINTER
  RSVATT    - RESOLVE ATTRIBUTE


CALLED DIRECTLY BY:
-------------------
  CALLFP    - CALL FP ROUTINES


USED IN MAIN PROGRAM(S):
------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                   PUTCUR
PURPOSE:                PUT CURSOR
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          FORTRAN VOID ()
SOURCE FILE:            PUTCUR
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:
------------


  SYNOPSIS
     FORTRAN VOID PUTCUR(EWPATH, CODEP)
        EPATH   EWPATH;
        CHAR    CODEP[];
     INPUTS:
    EWPATH - PATH TO FIELD

     OUTPUTS:
    CODEP - RETURN CODE

  DESCRIPTION
     PUTCUR POSITIONS THE CURSOR AT THE SPECIFIED FIELD.

ARGUMENTS:
----------

  EWPATH =        EPATH
  CODEP =         CHAR []


INCLUDE FILES:
--------------

  STDTYP      - STANDARD TYPE DEFINITIONS
  FPD         - FORM PROCESSOR DATA
  FPCODE      - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
----------------


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ESCPY      - EXTERNAL STRING COPY
PTHPTR     - GET PATH POINTER
POSCUR     - POSITION CURSOR
MEMCPY


CALLED DIRECTLY BY:
--------------------
  CALLFP     - CALL FP ROUTINES
  UIS        - USR INTERFACE SERVICES


USED IN MAIN PROGRAM(S):
--------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                    PUTLOC
PURPOSE:                 PUT LOCATION
LANGUAGE:                C
MODULE TYPE:             SUBROUTINE
FUNCTION TYPE:           VOID ()
SOURCE FILE:             PUTLOC
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
     STATIC VOID PUTLOC(EWPATH, ROW, COL, CODEP)
         EPATH   EWPATH;
         INT     ROW, COL;
         CHAR    CODEP[];

     INPUTS:
   EWPATH - PATH TO FIELD
         ROW     - ROW WITHIN THE FIELD
         COL     - COLUMN WITHIN THE FIELD

     OUTPUTS:
   CODEP - RETURN CODE

  DESCRIPTION
     PUTS THE CURSOR AT THE SPECIFIED ROW AND COLUMN WITHIN THE
                     GIVEN FIELD.
     THIS DIFFERS FROM THE FP PUTCUR IN THAT IT ALLOWS THE ROW
                     AND COLUMN
     WITHIN A FIELD TO BE SPECIFIED. THE FP PUTCUR ALWAYS PUTS
                     THE CURSOR
     AT ROW 1 COLUMN 1 WITHIN A FIELD.

ARGUMENTS:
----------
   EWPATH =        EPATH
   ROW =        INT *
   COL =        INT *

CODEP =          CHAR [ ]


INCLUDE FILES:
----------------
  STDTYP      - STANDARD TYPE DEFINITIONS
  FPD         - FORM PROCESSOR DATA
  FPCODE      - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
------------------
  ESCPY       - EXTERNAL STRING COPY
  PTHPTR      - GET PATH POINTER
  POSCUR      - POSITION CURSOR
  MEMCPY


CALLED DIRECTLY BY:
--------------------
  CALLFP      - CALL FP ROUTINES


USED IN MAIN PROGRAM(S):
-------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                    RMVAP
PURPOSE:                 REMOVE APPLICATION
LANGUAGE:                C
MODULE TYPE:             SUBROUTINE
FUNCTION TYPE:           VOID ()
SOURCE FILE:             RMVAP
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
-------------

  SYNOPSIS
     VOID RMVAP(APPTR)
         AP   *APPTR;

     INPUTS/OUTPUTS:


     INPUTS:
       APPTR - AP STRUCTURE IS TO BE REMOVED

     OUTPUTS:
       NONE

  DESCRIPTION
     THIS MODULE DELETES AN AP STRUCTURE FROM INTERNAL DATA
                    STRUCTURE

ARGUMENTS:
-----------

  APPTR =         AP *


INCLUDE FILES:
---------------

  STDTYP      - STANDARD TYPE DEFINITIONS
  FPD         - FORM PROCESSOR DATA

ROUTINES CALLED:
-----------------

  SPRINTF
  PMSGLS     - PUT MESSAGE LINE STRING
  CBIT
  ATOI
  RMVFPD     - REMOVE FORM PROCESSOR DATA STRUCTURE
  CFREE
  DSPMSG


CALLED DIRECTLY BY:
--------------------

  MAKAP     - MAKE APLICATION STRUTURE
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
  TRMUSR    - TERMINATE USER


USED IN MAIN PROGRAM(S):
--------------------------

  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation

```
NAME:                  RMVFPD
PURPOSE:               REMOVE FORM PROCESSOR DATA STRUCTURE
LANGUAGE:              C
MODULE TYPE:           SUBROUTINE
FUNCTION TYPE:         VOID ()
SOURCE FILE:           RMVFPD
SOURCE FILE TYPE:      .C
HOST:
SUBSYSTEM:             UI
SUBDIRECTORY:          FP
DOCUMENTATION GROUP:   FORMPROC
```

DESCRIPTION:
------------

    SYNOPSIS
        VOID RMVFPD(FPDPTR)
            FPD  *FPDPTR;

    DESCRIPTION
        TERMINATE FORM PROCESSOR.

ARGUMENTS:
----------

    FPDPTR =         FPD *


INCLUDE FILES:
--------------

    STDTYP      - STANDARD TYPE DEFINITIONS
    FPD         - FORM PROCESSOR DATA
    CTLCHR      - CONTROL CHARACTERS


ROUTINES CALLED:
----------------

    FREMSG
    POSCUR      - POSITION CURSOR
    SPRINTF
    PDVOTP      - PUT DEVICE OUTPUT
    STRLEN
    DELFLD      - DELETE FIELD
    CFREE

CALLED DIRECTLY BY:
--------------------

| CLSLDV | - CLOSE LOGICAL DEVICE |
| RMVAP | - REMOVE APPLICATION |
| RMVPD | - REMOVE PHYSICAL DEVICE DATA STRUCTRUE |

USED IN MAIN PROGRAM(S):
---------------------------

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                    RMVPAG
PURPOSE:                 REMOVE PAGE
LANGUAGE:                C
MODULE TYPE:             FUNCTION
FUNCTION TYPE:           FORTRAN VOID ()
SOURCE FILE:             RMVPAG
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC


DESCRIPTION:
------------

    SYNOPSIS
        FORTRAN VOID RMVPAG(EWPATH, PNUMP, RCODE)
            EPATH    EWPATH;
            INT      *PNUMP;
            CHAR     RCODE[];

        INPUTS:
            EWPATH - WINDOW TO REMOVE FROM
            PNUMP  - PAGE NUMBER TO REMOVE

        OUTPUTS:
            RCODE - RETURN CODE

    DESCRIPTION
        USE RMVPAG TO REMOVE A PAGE FROM A WINDOW. WHEN A PAGE
        IS REMOVED ALL PAGES ABOVE IT (I.E. HAVE LARGER PAGE
        NUMBERS) ARE ALSO REMOVED.

ARGUMENTS:
----------
    EWPATH =        EPATH
    PNUMP =         INT *
    RCODE =         CHAR []


INCLUDE FILES:
--------------
    STDTYP      - STANDARD TYPE DEFINITIONS

FPD          - FORM PROCESSOR DATA
FPCODE       - FORM PROCESSOR RETURN CODES
FPPARM       - FORM PROCESSOR PARAMETERS


ROUTINES CALLED:
------------------

ESCPY        - EXTERNAL STRING COPY
PTHPTR       - GET PATH POINTER
SYSMSG       - SYSTEM MESSAGE ROUTINE
DELFLD       - DELETE FIELD
MAX
STRASN
MEMCPY


CALLED DIRECTLY BY:
---------------------

CALLFP       - CALL FP ROUTINES
UIS          - USR INTERFACE SERVICES


USED IN MAIN PROGRAM(S):
---------------------------

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                   RMVPD
PURPOSE:                REMOVE PHYSICAL DEVICE DATA STRUCTRUE
LANGUAGE:               C
MODULE TYPE:            SUBROUTINE
FUNCTION TYPE:          VOID ()
SOURCE FILE:            RMVPD
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
     VOID RMVPD(PDPTR)
         PD   *PDPTR;
         INT FLG;

     INPUTS/OUTPUTS:


     INPUTS:
       PDPTR - PD STRUCTURE IS TO BE REMOVED
       FLG   - 0 = DO NOT REMOVE LOGICAL DEVICE(FPD) - NRMVFPD
               1 = REMOVE LOGICAL DEVICE(FPD) AND CALL TRMDRV
                     - RMVFPD
               2 = DO NOT CALL TRMDRV DEVICE ALREADY DEAD -
                     DEAD

     OUTPUTS:
       NONE

  DESCRIPTION
     THIS MODULE DELETES AN PD STRUCTURE FROM INTERNAL DATA
                   STRUCTURE

ARGUMENTS:
----------

  PDPTR =         PD *
  FLG  =          INT

INCLUDE FILES:
--------------
    STDTYP      - STANDARD TYPE DEFINITIONS
    FPD         - FORM PROCESSOR DATA
    FPCODE      - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
----------------
    FCLOSE
    RMVFPD      - REMOVE FORM PROCESSOR DATA STRUCTURE
    TRMDRV      - TERMINATE DEVICE DRIVER
    CFREE


CALLED DIRECTLY BY:
-------------------
    MAKUSR      - MAKE USER
    MONITR/MAI  - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
    TRMUSR      - TERMINATE USER
    UIS/STRTAP  - START APPLICATION
    UIS/PRCINP  - PRCESS INPUT


USED IN MAIN PROGRAM(S):
------------------------
    MONITR/MAI  - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                   RPLFRM
PURPOSE:                REPLACE FORM
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          FORTRAN VOID ()
SOURCE FILE:            RPLFRM
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC

DESCRIPTION:
-------------

    SYNOPSIS
        FORTRAN VOID RPLFRM(EWPATH, PNUMP, EFNAME, RCODE)
            EPATH   EWPATH;
            INT     *PNUMP;
            ENAME   EFNAME;
            CHAR    RCODE[];

        INPUTS:
            EWPATH - PATH OF WINDOW TO REPLACE IN
            PNUMP  - PAGE NUMBER TO REPLACE
            EFNAME - FORM TO REPLACE WITH

        OUTPUTS:
            RCODE - RETURN CODE

    DESCRIPTION
        USE RPLFRM TO REPLACE A FORM IN A WINDOW.

ARGUMENTS:
-----------
    EWPATH =        EPATH
    PNUMP  =        INT *
    EFNAME =        ENAME
    RCODE  =        CHAR []


INCLUDE FILES:
--------------

STDTYP       - STANDARD TYPE DEFINITIONS
FPD          - FORM PROCESSOR DATA
FPCODE       - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
------------------

ESCPY        - EXTERNAL STRING COPY
PTHPTR       - GET PATH POINTER
SYSMSG       - SYSTEM MESSAGE ROUTINE
DELFLD       - DELETE FIELD
COPFRM       - COPY FORM
RSVATT       - RESOLVE ATTRIBUTE
MEMCPY


CALLED DIRECTLY BY:
---------------------

CALLFP       - CALL FP ROUTINES


USED IN MAIN PROGRAM(S):
--------------------------

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation

NAME:                    RSVATT
PURPOSE:                 RESOLVE ATTRIBUTE
LANGUAGE:                C
MODULE TYPE:             SUBROUTINE
FUNCTION TYPE:           VOID ()
SOURCE FILE:             RSVATT
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
     VOID RSVATT(DP)
        FIELD *DP

     INPUTS:
        *DP - FIELD POINTER OF FIELD WHOSE ATTRIBUTE IS BEING
                     RESOVED.

  DESCRIPTION
     RSVATT RESOLVES BACKGROUND ATTRIBUTES

ARGUMENTS:
-----------
  DP =        FIELD *


INCLUDE FILES:
---------------

  STDTYP       - STANDARD TYPE DEFINITIONS
  FPD          - FORM PROCESSOR DATA


ROUTINES CALLED:
-----------------

  RSVATT/RSVRST - RESOLVE REST
  STRASN

CALLED DIRECTLY BY:
--------------------

   COPFLD     - COPY FIELD
   PUTBAK     - PUT  BACKGROUND ATTRIBUTES
   RPLFRM     - REPLACE FORM


USED IN MAIN PROGRAM(S):
-------------------------

   MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                  RSVATT/RSVRST
PURPOSE:               RESOLVE REST
LANGUAGE:              C
MODULE TYPE:           SUBROUTINE
FUNCTION TYPE:         VOID ()
SOURCE FILE:           RSVATT
SOURCE FILE TYPE:      .C
HOST:
SUBSYSTEM:             UI
SUBDIRECTORY:          FP
DOCUMENTATION GROUP:   FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
     STATIC VOID RSVRST(DP)
         FIELD *DP;

     INPUTS:
        *DP    - FIELD POINTER OF 1RST FIELD IN LEVEL BEING
                    RESOVED.

  DESCRIPTION
     RSVRST DOES THE REAL WORK OF RESOLVING BACKGROUND
                    ATTRIBUTES

ARGUMENTS:
----------

  DP =          FIELD *


INCLUDE FILES:
--------------

  STDTYP      - STANDARD TYPE DEFINITIONS
  FPD         - FORM PROCESSOR DATA


ROUTINES CALLED:
----------------

  RSVATT/RSVRST - RESOLVE REST
  STRASN
  MABSAT      - MAP ABSOLUTE ATTRIBUTE

CALLED DIRECTLY BY:
--------------------
  RSVATT/RSVRST - RESOLVE REST
  RSVATT        - RESOLVE ATTRIBUTE


USED IN MAIN PROGRAM(S):
------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                    RSVEXP
PURPOSE:                 RESOLVE EXPRESSIONS
LANGUAGE:                C
MODULE TYPE:             FUNCTION
FUNCTION TYPE:           CHAR * ()
SOURCE FILE:             RSVEXP
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
     CHAR *RSVEXP(DP)
        FIELD *DP;

     INPUTS:
        DP - POINTER TO FIELD TO RESOLVE

  DESCRIPTION
     ALL ITEMS SUBORDINATE TO THE GIVEN FIELD ARE EXAMINED FOR
                      AN EXPRESSION
     WHICH IS BUILT INTO A TREE AND EVALUATED.

ARGUMENTS:
----------
  DP =        FIELD *


INCLUDE FILES:
--------------
  STDTYP      - STANDARD TYPE DEFINITIONS
  CTYPE       - **** PURPOSE NOT FOUND BY STRIPPER ****
  FPD         - FORM PROCESSOR DATA
  FPCODE      - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
----------------
  RSVEXP/BLDEXP - BUILD EXPRESSION TREE

```
SYSMSG      - SYSTEM MESSAGE ROUTINE
RSVEXP      - RESOLVE EXPRESSIONS
CMPFLD      - COMPUTE FIELD
```

CALLED DIRECTLY BY:
-------------------

```
ADDELM      - ADD ELEMENT
COPFRM      - COPY FORM
RSVEXP      - RESOLVE EXPRESSIONS
```

USED IN MAIN PROGRAM(S):
-----------------------------

```
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation


NAME:                  RSVEXP/BLDEXP
PURPOSE:               BUILD EXPRESSION TREE
LANGUAGE:              C
MODULE TYPE:           FUNCTION
FUNCTION TYPE:         CHAR * ()
SOURCE FILE:           RSVEXP
SOURCE FILE TYPE:      .C
HOST:
SUBSYSTEM:             UI
SUBDIRECTORY:          FP
DOCUMENTATION GROUP:   FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
     STATIC CHAR *BLDEXP(DP. S. EPP)
         FIELD *DP;
         CHAR **S;
         ENODE **EPP;

     INPUTS:
         DP - POINTER TO FIELD CONTAINING THE EXPRESSION
         S  - EXPRESSION STRING TO BUILD TREE FROM

     OUTPUTS:
         EPP - POINTER TO ROOT OF BUILT TREE
         RETURNS AN ERROR CODE OR NULL

  DESCRIPTION
     SETS A POINTER TO THE ROOT OF THE EXPRESSION TREE BUILT
                     FROM THE SUPPLIED
     STRING.

ARGUMENTS:
----------
  DP =         FIELD *
  SP =         CHAR **
  EPP =        ENODE **


INCLUDE FILES:
--------------
  STDTYP      - STANDARD TYPE DEFINITIONS

CTYPE          - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD            - FORM PROCESSOR DATA
FPCODE         - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
-----------------
FREE
RSVEXP/BLDEXP - BUILD EXPRESSION TREE
ISDIGIT
STRCHR
PTHPTR        - GET PATH POINTER
SYSMSG        - SYSTEM MESSAGE ROUTINE
MALLOC


CALLED DIRECTLY BY:
--------------------
RSVEXP/BLDEXP - BUILD EXPRESSION TREE
RSVEXP        - RESOLVE EXPRESSIONS


USED IN MAIN PROGRAM(S):
---------------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation

| | |
|---|---|
| NAME: | SFPDAP |
| PURPOSE | SET FORM PROCESSOR DATA STRUCTURE FOR APLICATION |
| LANGUAGE: | C |
| MODULE TYPE: | FUNCTION |
| FUNCTION TYPE: | CHAR * ( ) |
| SOURCE FILE: | SFPDAP |
| SOURCE FILE TYPE: | .C |
| HOST: | |
| SUBSYSTEM: | UI |
| SUBDIRECTORY: | FP |
| DOCUMENTATION GROUP: | FORMPROC |

DESCRIPTION:
- - - - - - - - - - - -

   SYNOPSIS
     CHAR *SFPDAP(APNAM,APCHAN)
      NAME APNAM;
      CHAN APCHAN;

    INPUTS/OUTPUTS:


    INPUTS:
     APNAM   - NAME OF AP STRUCTURE WILL BE FOR - FROM NTM
     APCHAN - UNIQUE INSTANCE OF AP - FROM NTM

    OUTPUTS:
     RETURNS POINTER TO ERROR CODE FOR FORM PROCESSOR IF
                  ERROR
     OR A NULL POINTER

  DESCRIPTION
    THIS MODULE IS CALLED BY MONITOR ROUTINE TO SET UP THE FPD
    STRUCTURE INORDER TO MAKE ITS CALL TO "CALLFP".

ARGUMENTS:
- - - - - - - - - -
  APNAM =      ENAME
  APCHAN =     CHAN

INCLUDE FILES

STDTYP      -- STANDARD TYPE DEFINITIONS
FPD         - FORM PROCESSOR DATA
FPCODE      - FORM PROCESSOR RETURN CODES


ROUTINES CALLED

ESCPY       - EXTERNAL STRING COPY
STRCMP
SYSMSG      - SYSTEM MESSAGE ROUTINE


CALLED DIRECTLY BY

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS


USED IN MAIN PROGRAM(S)

MONITR·MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                    STUPFP
PURPOSE:                 SET UP FORM PROCESSOR DATA STRUCTURES
LANGUAGE:                C
MODULE TYPE:             FUNCTION
FUNCTION TYPE:           CHAR * ()
SOURCE FILE:             STUPFP
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
     CHAR *STUPFP(FPDPTR)
        FPD *FPDPTR;

     INPUTS/OUTPUTS:

     INPUTS:
        FPDPTR - POINTER TO LOGICAL DEVICE(FPD)

     OUTPUTS:
        RETURNS A POINTER TO ERROR CODE IF ERRRO OR A NULL
                       POINTER NO ERROR

  DESCRIPTION
     OPENS PSCREN FORM, CREATES FIRST WINDOW  AND COPIES THIS
                       STUCTURE INTO
     FIELD DISPLAY LIST (FIRST ENTERY).

ARGUMENTS:
-----------

  FPDPTR =         FPD *


INCLUDE FILES:
---------------

  STDTYP      - STANDARD TYPE DEFINITIONS
  FPD         - FORM PROCESSOR DATA
  FPCODE      - FORM PROCESSOR RETURN CODES


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ROUTINES CALLED:

----------------

    GATDEF      - GET ATTRIBUTE DEFINITION
    MAKFLD      - MAKE FIELD
    COPFRM      - COPY FORM
    SYSMSG      - SYSTEM MESSAGE ROUTINE
    SBIT
    STRASN
    FFBCA


CALLED DIRECTLY BY:

-------------------

    MAKAP       - MAKE APLICATION STRUTURE
    MAKUSR      - MAKE USER
    OPNLDV      - OPEN LOGICAL DEVICE


USED IN MAIN PROGRAM(S):

------------------------

    MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                   SYSMSG
PURPOSE:                SYSTEM MESSAGE ROUTINE
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          CHAR * ()
SOURCE FILE:            SYSMSG
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
     CHAR *SYSMSG(CODE)
        CHAR *CODE;

     INPUTS:
   CODE - ERROR CODE

  DESCRIPTION
     IF ERROR CODE IS FATAL TO FORM PROCESSOR (79,000 >‹
                     79,999), IT
     GETS ERROR CODE AND ERROR MESSAGES AND PASSES THEM TO
                     ERRPRO()
     WHICH WRITES THEM TO AN ERROR LOG FILE

ARGUMENTS:
----------
  CODE =        CHAR *


INCLUDE FILES:
--------------
  STDTYP      - STANDARD TYPE DEFINITIONS
  FPD         - FORM PROCESSOR DATA
  FPCODE      - FORM PROCESSOR RETURN CODES


ROUTINES CALLED:
----------------

```
ATOI
FNDMSG       - FIND MESSAGE
ERRPRO
STRNCMP
PMSGLC       - PUT MESSAGE LINE CODE
```

CALLED DIRECTLY BY:
--------------------

```
ADDELM       - ADD ELEMENT
ADDFRM       - ADD FORM TO WINDOW
CALLFP       - CALL FP ROUTINES
CLSFRM       - CLOSE FORM
CMPFLD/EVA   - EVALUATE FIELD EXPRESSION
CMPFLD       - COMPUTE FIELD
COPFLD/CPYFLD - INTERNAL COPY FIELD
COPFRM       - COPY FORM
DELFLD       - DELETE FIELD
GATDEF       - GET ATTRIBUTE DEFINITION
GDATA        - GET DATA
GDVINP       - GET DEVICE INPUT
GETATT       - GET ATTRIBUTE
GETBAK       - GET BACKGROUND ATTRIBUTE
GETCUR       - GET CURSOR POSITION
GPAGE        - GET PAGE
MAKAP        - MAKE APLICATION STRUTURE
MAKFLD       - MAKE FIELD
MAKUSR       - MAKE USER
MONITR/MAI   - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
OISCR/CNGMSG - CHECK FOR AND PROCESS CHANGE MESSAGE REQUESTS
OISCR/PROCFLD - PROCESS FIELD
OISCR/EVTBUF - EMPTY VTI BUFFER
ONWISC       - OUTPUT (NO WAIT) / INPUT SCREEN
INSCR        - INPUT SCREEN
OPNFRM/PFREC - PROCESS FORM RECORD
OPNFRM/PTREC - PROCESS TEXT RECORD
OPNFRM/PDREC - PROCESS FIELD RECORD
OPNFRM/PAR - PROCESS ARRAY
OPNFRM/PIT - PROCESS ITEM
OPNFRM/PFR - PROCESS FORM
OPNFRM/BTBUFF - BUILD TEXT BUFFER
OPNFRM/BDBUFF - BUILD DEFAULT BUFFER
OPNFRM/BFLDDB - BUILD FIELD DEFAULT BUFFER
OPNFRM/BRPNOD - BUILD RELATIVE POSITION NODE
OPNFRM       - OPEN FORM
PARFQN       - PARSE FULLY QUALIFIED NAME
PDATA/PUTBUF - PUT BUFFER
```

```
PDVOTP      - PUT DEVICE OUTPUT
PTHPTR      - GET PATH POINTER
PUTATT      - PUT ATTRIBUTES
PUTBAK      - PUT  BACKGROUND ATTRIBUTES
RMVPAG      - REMOVE PAGE
RPLFRM      - REPLACE FORM
RSVEXP/BLDEXP - BUILD EXPRESSION TREE
RSVEXP      - RESOLVE EXPRESSIONS
SFPDAP      - SET FORM PROCESSOR DATA STRUCTURE FOR APLICATION
STUPFP      - SET UP FORM PROCESSOR DATA STRUCTURES
TRMDRV      - TERMINATE DEVICE DRIVER
TRMUSR      - TERMINATE USER
UIS/STRTAP  - START APPLICATION
UIS/STRTPD  - START PHYSICAL DEVICE
UIS/PRCINP  - PRCESS INPUT
UIS         - USR INTERFACE SERVICES
```

USED IN MAIN PROGRAM(S):
----------------------------

```
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation


```
NAME:                TERMVT
PURPOSE:             TERMINATE VIRTUAL TERMINAL INTERFACE
LANGUAGE:            C
MODULE TYPE:         SUBROUTINE
FUNCTION TYPE:       VOID ()
SOURCE FILE:         TERMVT
SOURCE FILE TYPE:    .C
HOST:
SUBSYSTEM:           UI
SUBDIRECTORY:        FP
DOCUMENTATION GROUP: FORMPROC
```

DESCRIPTION:
------------

  SYNOPSIS
    TERMVT(RCODE)
      CHAR RCODE[]

    INPUTS/OUTPUTS:


    INPUTS:
      NONE

    OUTPUTS:
      RCODE - STANDARD FORM PROCESSOR RETURN CODE

  DESCRIPTION

    CLEARS VTI MODE FLAG AND SET MAX BUFF LENGTH BACK TO 0

ARGUMENTS:
----------
  RCODE =      CHAR []


INCLUDE FILES:
--------------
  STDTYP      - STANDARD TYPE DEFINITIONS
  FPD         - FORM PROCESSOR DATA
  FPCODE      - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:
-----------------
   MEMCPY


CALLED DIRECTLY BY:
-------------------
   CALLFP      - CALL FP ROUTINES


USED IN MAIN PROGRAM(S):
------------------------
   MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation

NAME:                   TRMDRV
PURPOSE:                TERMINATE DEVICE DRIVER
LANGUAGE:               C
MODULE TYPE:            SUBROUTINE
FUNCTION TYPE:          VOID ()
SOURCE FILE:            TRMDRV
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
    VOID TRMDRV(PDPTR)
        PD              *PDPTR;


     INPUTS/OUTPUTS:


     INPUTS:
       PDPTR - POINTER TO DEVICE DIVER TERMINATING

     OUTPUTS:
       NONE

  DESCRIPTION
     THIS MODULE SENDS A SHUT DOWN MESSAGE TO DEVICE DRIVER
                     POINTED TO

ARGUMENTS:
-----------
  PDPTR =           PD *


INCLUDE FILES:
--------------
   STDTYP       - STANDARD TYPE DEFINITIONS
   FPD          - FORM PROCESSOR DATA
   FPCODE       - FORM PROCESSOR RETURN CODES

NTM            - NTM INTERFACE INCLUDE FILE


ROUTINES CALLED:
------------------
  MEMSET
  MEMCPY
  STRLEN
  NSEND
  MEMCMP
  SYSMSG      - SYSTEM MESSAGE ROUTINE


CALLED DIRECTLY BY:
--------------------
  RMVPD       - REMOVE PHYSICAL DEVICE DATA STRUCTRUE


USED IN MAIN PROGRAM(S):
--------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation

NAME:                   TRMUSR
PURPOSE:                TERMINATE USER
LANGUAGE:               C
MODULE TYPE:            SUBROUTINE
FUNCTION TYPE:          VOID ()
SOURCE FILE:            TRMUSR
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
     VOID TRMUSR(USRPTR)
         USR   *USRPTR;

     INPUTS/OUTPUTS:


     INPUTS:
       USRPTR - USER STRUCTURE IS TO BE REMOVED

     OUTPUTS:
       NONE

  DESCRIPTION
     THIS MODULE DELETES A USER STRUCTURE FROM INTERNAL DATA
                        STRUCTURE
     AND SENDS TERMINATING MESSAGES TO ALL THE USER'S PROCESSES

ARGUMENTS:
----------
  USRPTR =        USR *


INCLUDE FILES:
--------------
  STDTYP      - STANDARD TYPE DEFINITIONS
  FPD         - FORM PROCESSOR DATA
  FPCODE      - FORM PROCESSOR RETURN CODES


3-316

NTM          - NTM INTERFACE INCLUDE FILE


ROUTINES CALLED:
-----------------
  MEMSET
  MEMCPY
  STRLEN
  SIGABT
  MEMCMP
  SYSMSG     - SYSTEM MESSAGE ROUTINE
  RMVAP      - REMOVE APPLICATION
  RMVPD      - REMOVE PHYSICAL DEVICE DATA STRUCTRUE
  CFREE


CALLED DIRECTLY BY:
-------------------
  MAKUSR     - MAKE USER
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
  UIS        - USR INTERFACE SERVICES


USED IN MAIN PROGRAM(S):
------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                    UIS
PURPOSE:                 USR INTERFACE SERVICES
LANGUAGE:                C
MODULE TYPE:             SUBROUTINE
FUNCTION TYPE:           VOID ()
SOURCE FILE:             UIS
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
      UIS()


      INPUTS/OUTPUTS:


      INPUTS:
        NONE

      OUTPUTS:
        NONE

  DESCRIPTION
      THIS MODULE CONTAINES THE USER INTERFACE LOGON, FUNCTION
                    rICK
      AND WINDOW MANAGER SERVICE.


INCLUDE FILES:
---------------

    STDTYP      - STANDARD TYPE DEFINITIONS
    FPD         - FORM PROCESSOR DATA
    FPPARM      - FORM PROCESSOR PARAMETERS
    FPCODE      - FORM PROCESSOR RETURN CODES
    CTLCHR      - CONTROL CHARACTERS
    DBASEI      - DATABASE ITERFACE
    NTM         - NTM INTERFACE INCLUDE FILE

UISFM        - UIS FORM


ROUTINES CALLED:
------------------
  OPNFRM       - OPEN FORM
  MEMCMP
  UIS/PRCWND   - PRCESS WINDOW
  UIS/FLWNST   - FILL WINDOW MANAGER STRUCTURE
  PMSGLC       - PUT MESSAGE LINE CODE
  DBCROL       - CHECK ROLE
  PUTCUR       - PUT CURSOR
  MEMSET
  MEMCPY
  UIS/STRTAP   - START APPLICATION
  PDATA        - PUT FORM DATA
  ESCPY        - EXTERNAL STRING COPY
  SPRINTF
  PDVOTP       - PUT DEVICE OUTPUT
  STRLEN
  ONWISC       - OUTPUT (NO WAIT) / INPUT SCREEN
  SYSMSG       - SYSTEM MESSAGE ROUTINE
  TRMUSR       - TERMINATE USER
  OUTSCR       - OUTPUT SCREEN
  PMSGLS       - PUT MESSAGE LINE STRING
  RMVPAG       - REMOVE PAGE
  DBCUPR
  GDATA        - GET DATA
  ADDFRM       - ADD FORM TO WINDOW


CALLED DIRECTLY BY:
--------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS


USED IN MAIN PROGRAM(S):
--------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                      UIS/FLWINF
PURPOSE.                   FILL WINDOW INFORMATION
LANGUAGE:                  C
MODULE TYPE:               SUBROUTINE
FUNCTION TYPE:             VOID ( )
SOURCE FILE:               UIS
SOURCE FILE TYPE:          .C
HOST:
SUBSYSTEM.                 UI
SUBDIRECTORY:              FP
DOCUMENTATION GROUP:       FORMPROC

DESCRIPTION:
- - - - - - - - - - - - -

  SYNOPSIS
     STATIC VOID FLWINF(WNMNGR, APNAM, APCHAN, DP, LEV)
          STRUCT WNMNGR   *WNMNGR;
          NAME            APNAM;
          CHAN            APCHAN;
          FIELD           *DP;
          INT             *I;

     INPUTS/OUTPUTS:


     INPUTS:
        WNMNGR - DATA STURCTURE FOR WINDOW MANAGER WICH IS TO
                    BE FILLED
        APNAM   - NAME OF APLICATION TO WHICH WINDOW BELONGS
        APCHAN  - CHANNEL OF APLICATION TO WHICH WINDOW BELONGS
        DP      - POINTER TO CURRENT FIELD
        INT     - INDEX ARRAY OF DATA STRUCTURES
     OUTPUTS:
        NONE

  DESCRIPTION
     THIS MODULE FILLS DATA STRUCTRUE FOR PARTICULAR WINDOW
                    FROM FPD STRUCTURE

ARGUMENTS:
- - - - - - - - - - -

  WNMNGR =        STRUCT WNMNGR *
  APNAM =         NAME

```
APCHAN =        CHAN
DP =        FIELD *
I =         INT *
```

INCLUDE FILES:
----------------

```
STDTYP     - STANDARD TYPE DEFINITIONS
FPD        - FORM PROCESSOR DATA
FPPARM     - FORM PROCESSOR PARAMETERS
FPCODE     - FORM PROCESSOR RETURN CODES
CTLCHR     - CONTROL CHARACTERS
DBASEI     - DATABASE ITERFACE
NTM        - NTM INTERFACE INCLUDE FILE
UISFM      - UIS FORM
```

ROUTINES CALLED:
----------------

```
UIS/FLWINF - FILL WINDOW INFORMATION
SPRINTF
```

CALLED DIRECTLY BY:
--------------------

```
UIS/FLWNST - FILL WINDOW MANAGER STRUCTURE
UIS/FLWINF - FILL WINDOW INFORMATION
```

USED IN MAIN PROGRAM(S):
-----------------------------

```
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation


NAME:                   UIS/FLWNST
PURPOSE:                FILL WINDOW MANAGER STRUCTURE
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          BOOL ()
SOURCE FILE:            UIS
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC

DESCRIPTION:
------------
  SYNOPSIS
      STATIC BOOL FLWNST(WNMNGR)
          STRUCT WNMNGR *WNMNGR;

      INPUTS/OUTPUTS:


      INPUTS:
        WNMNGR - DATA STURCTURE FOR WINDOW MANAGER WICH IS TO
                     BE FILLED

      OUTPUTS:
        RETURNS SUCCESS/FAILURE

  DESCRIPTION
      THIS MODULE FILLS DATA STRUCTRUE FOR WINDOW MANAGER FROM
                     FPD STRUCTURE

ARGUMENTS:
-----------
  WNMNGR =        STRUCT WNMNGR *


INCLUDE FILES:
---------------
    STDTYP      - STANDARD TYPE DEFINITIONS
    FPD         - FORM PROCESSOR DATA
    FPPARM      - FORM PROCESSOR PARAMETERS
    FPCODE      - FORM PROCESSOR RETURN CODES

```
CTLCHR     - CONTROL CHARACTERS
DBASEI     - DATABASE ITERFACE
NTM        - NTM INTERFACE INCLUDE FILE
UISFM      - UIS FORM
```

ROUTINES CALLED:
-----------------

```
UIS/FLWINF - FILL WINDOW INFORMATION
ESCPY      - EXTERNAL STRING COPY
MEMCMP
PUTATT     - PUT ATTRIBUTES
SPRINTF
MEMSET
```

CALLED DIRECTLY BY:
--------------------

```
UIS        - USR INTERFACE SERVICES
```

USED IN MAIN PROGRAM(S):
-------------------------

```
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation


NAME:                    UIS/PRCINP
PURPOSE:                 PRCESS INPUT
LANGUAGE:                C
MODULE TYPE:             FUNCTION
FUNCTION TYPE:           FPD * ()
SOURCE FILE:             UIS
SOURCE FILE TYPE:        .C
HOST:
SUBSYSTEM:               UI
SUBDIRECTORY:            FP
DOCUMENTATION GROUP:     FORMPROC


DESCRIPTION:
------------

  SYNOPSIS
     STATIC FPD *PRCINP(WNINP, OWNINP)
         STRUCT WNDMNGINP *WNINP
         STRUCT WNDMNGINP *OWNINP;

    INPUTS/OUTPUTS:


    INPUTS:
      WNINP   - DATA STURCTURE FOR WINDOW MANAGER WHICH IS TO
                  BE PROCESSSED
      OWNINP  - OLD DATA STURCTURE - USED TO SEE IF CHANGES
                  WERE MADE

    OUTPUTS:
      RETURNS POINTER TO FPD STRUCTURE IF SUCCESS ELSE A NULL

  DESCRIPTION
     THIS MODULE PROCESSES WINDOW MANAGER INPUT AND MAKES THE
                  APPROPRIATE
     CHANGES TO FPD DATA STRUCTURE.

ARGUMENTS:
----------

   WNINP  =        STRUCT WNDMNGINP *
   OWNINP =        STRUCT WNDMNGINP *


INCLUDE FILES:

```
      --------------
  STDTYP      - STANDARD TYPE DEFINITIONS
  FPD         - FORM PROCESSOR DATA
  FPPARM      - FORM PROCESSOR PARAMETERS
  FPCODE      - FORM PROCESSOR RETURN CODES
  CTLCHR      - CONTROL CHARACTERS
  DBASEI      - DATABASE ITERFACE
  NTM         - NTM INTERFACE INCLUDE FILE
  UISFM       - UIS FORM
```

ROUTINES CALLED:
```
  ----------------
  MAX
  MIN
  ULKFPD      - UNLINKK FPD
  RMVPD       - REMOVE PHYSICAL DEVICE DATA STRUCTRUE
  STRLEN
  PDVOTP      - PUT DEVICE OUTPUT
  SPRINTF
  UIS/STRTPD  - START PHYSICAL DEVICE
  SYSMSG      - SYSTEM MESSAGE ROUTINE
  STRCMP
  ESCPY       - EXTERNAL STRING COPY
  FNFPWN      - FIND FORM PROCESSOR WINDOW
  MEMCMP
  MATOI
```

CALLED DIRECTLY BY:
```
  -------------------
  UIS/PRCWND  - PRCESS WINDOW
```

USED IN MAIN PROGRAM(S):
```
  ------------------------
  MONITR/MAI  - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation


NAME:                  UIS/PRCWND
PURPOSE:               PRCESS WINDOW
LANGUAGE:              C
MODULE TYPE:           FUNCTION
FUNCTION TYPE:         BOOL ()
SOURCE FILE:           UIS
SOURCE FILE TYPE:      .C
HOST:
SUBSYSTEM:             UI
SUBDIRECTORY:          FP
DOCUMENTATION GROUP:   FORMPROC

DESCRIPTION:
-------------

  SYNOPSIS
      STATIC VOID PRCWND(WNMNGR, OWNMNGR)
          STRUCT WNMNGR *WNMNGR;
          STRUCT WNMNGR *OWNMNGR;

      INPUTS/OUTPUTS:


      INPUTS:
        WNMNGR - DATA STURCTURE FOR WINDOW MANAGER WHICH IS TO
                      BE FILLED

      OUTPUTS:
        RETURNS SUCCESS/FAILURE

  DESCRIPTION
      THIS MODULE PROCESSES WINDOW MANAGER INPUT AND MAKES THE
                      APPROPRIATE
      CHANGES TO FPD DATA STRUCTURE.

ARGUMENTS:
-----------

  WNMNGR =         STRUCT WNMNGR *
  OWNMNGR =        STRUCT WNMNGR *


INCLUDE FILES:
------- -------

  STDTYP      - STANDARD TYPE DEFINITIONS

FPD         - FORM PROCESSOR DATA
FPPARM      - FORM PROCESSOR PARAMETERS
FPCODE      - FORM PROCESSOR RETURN CODES
CTLCHR      - CONTROL CHARACTERS
DBASEI      - DATABASE ITERFACE
NTM         - NTM INTERFACE INCLUDE FILE
UISFM       - UIS FORM


ROUTINES CALLED:
------------------
CHGPRC      - CHANGE PRECEDENCE OF WINDOW OR LOGICAL DEVICE
PMSGLS      - PUT MESSAGE LINE STRING
SPRINTF
MATOI
UIS/PRCINP  - PRCESS INPUT
MEMCMP
MEMSET


CALLED DIRECTLY BY:
--------------------
UIS         - USR INTERFACE SERVICES


USED IN MAIN PROGRAM(S):
--------------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                   UIS/STRTAP
PURPOSE:                START APPLICATION
LANGUAGE:               C
MODULE TYPE:            SUBROUTINE
FUNCTION TYPE:          VOID ()
SOURCE FILE:            UIS
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC

DESCRIPTION:
--------------

  SYNOPSIS
      STATIC VOID STRTAP(FUNCTN)
          STRUCT FUNCTN *FUNCTN;


      INPUTS/OUTPUTS:


      INPUTS:
        FUNCTN - INPUT DATA FROM THE FUNCTION SCREEN

      OUTPUTS:
        NONE

  DESCRIPTION
      THIS MODULE STARTS UP AN APPLICATION AFTER MAKING SURE
                      USER ALLOWED TO
      RUN IT. IT ALSO CALLS MAKAP TO CREATE THE DATA STRUCTURE
                      FOR THE
      APPLICATION AND STRTPD TO START THE PHYSICAL DEVICE IF
                      SPECIFIED

ARGUMENTS:
----------

  FUNCTN =        STRUCT FUNCTN *


INCLUDE FILES:
----------------

STDTYP       - STANDARD TYPE DEFINITIONS
FPD          - FORM PROCESSOR DATA
FPPARM       - FORM PROCESSOR PARAMETERS
FPCODE       - FORM PROCESSOR RETURN CODES
CTLCHR       - CONTROL CHARACTERS
DBASEI       - DATABASE ITERFACE
NTM          - NTM INTERFACE INCLUDE FILE
UISFM        - UIS FORM


ROUTINES CALLED:
-----------------

SYSMSG       - SYSTEM MESSAGE ROUTINE
SIGABT
MAKAP        - MAKE APLICATION STRUTURE
ISEND
RMVPD        - REMOVE PHYSICAL DEVICE DATA STRUCTRUE
PMSGLS       - PUT MESSAGE LINE STRING
SPRINTF
FFBCA
DBCOM
STRLEN
ESCPY        - EXTERNAL STRING COPY
DBGAPD
UIS/STRTPD   - START PHYSICAL DEVICE
PMSGLC       - PUT MESSAGE LINE CODE
DBCFNC       - CHECK FUNCTION
MEMCMP


CALLED DIRECTLY BY:
-------------------

UIS          - USR INTERFACE SERVICES


USED IN MAIN PROGRAM(S):
-------------------------

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FORM PROCESSOR Module Documentation


NAME:                   UIS/STRTPD
PURPOSE:                START PHYSICAL DEVICE
LANGUAGE:               C
MODULE TYPE:            FUNCTION
FUNCTION TYPE:          PD * ()
SOURCE FILE:            UIS
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC

DESCRIPTION:
------------

  SYNOPSIS
     STATIC PD *STRTPD(DEVICE, DEVTYP)
          ENAME           DEVICE;
          ENAME           DEVTYP;


     INPUTS/OUTPUTS:


     INPUTS:
       DEVICE - NAME OF ACTUAL PHYSICAL DEVICE
       DEVTYP - NAME OF DEVICE DRIVER

     OUTPUTS:
       RETURNS POINTER TO (NEW OR CURRENT) PHYSICAL DEVICE OR
                     NULL IF FAILED

  DESCRIPTION
     THIS MODULE STARTS UP AN PHYSICAL DEVICE AFTER MAKPD TO
                     CREATE THE DATA
     STRUCTURE FOR THE DEVICE.

ARGUMENTS:
----------

  DEVICE =        ENAME
  DEVTYP =        ENAME


INCLUDE FILES:

```
    --------------
    STDTYP      - STANDARD TYPE DEFINITIONS
    FPD         - FORM PROCESSOR DATA
    FPPARM      - FORM PROCESSOR PARAMETERS
    FPCODE      - FORM PROCESSOR RETURN CODES
    CTLCHR      - CONTROL CHARACTERS
    DBASEI      - DATABASE ITERFACE
    NTM         - NTM INTERFACE INCLUDE FILE
    UISFM       - UIS FORM
```

ROUTINES CALLED:
```
    ----------------
    SYSMSG      - SYSTEM MESSAGE ROUTINE
    SIGABT
    MAKPD       - MAKE PHYSICAL DEVICE STRUCTURE
    ISEND
    FFBCA
    STRLEN
    FCLOSE
    FOPEN
    PMSGLS      - PUT MESSAGE LINE STRING
    SPRINTF
    FREE
    FSEARCH
    STRCMP
    ESCPY       - EXTERNAL STRING COPY
    MEMCMP
```

CALLED DIRECTLY BY:
```
    --------------------
    UIS/STRTAP - START APPLICATION
    UIS/PRCINP - PRCESS INPUT
```

USED IN MAIN PROGRAM(S):
```
    -------------------------
    MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
```

FORM PROCESSOR Module Documentation


NAME:                   ULKFPD
PURPOSE:                UNLINKK FPD
LANGUAGE:               C
MODULE TYPE:            SUBROUTINE
FUNCTION TYPE:          VOID ()
SOURCE FILE:            ULKFPD
SOURCE FILE TYPE:       .C
HOST:
SUBSYSTEM:              UI
SUBDIRECTORY:           FP
DOCUMENTATION GROUP:    FORMPROC

DESCRIPTION:
-------------

  SYNOPSIS
     VOID ULKFPD(FPDPTR)
         FPD *FPDPTR;

     INPUTS/OUTPUTS:


     INPUTS:
        FPDPTR - FPD STRUCTURE IS TO BE UNLINKED

     OUTPUTS:
        NONE

  DESCRIPTION
     THIS MODULE UNLINKS FPD STRUCTURE FROM PD STRUCTURE

ARGUMENTS:
----------

   FPDPTR =        FPD *


INCLUDE FILES:
--------------

   STDTYP       - STANDARD TYPE DEFINITIONS
   FPD          - FORM PROCESSOR DATA


CALLED DIRECTLY BY.

--------------------

  UIS/PRCINP - PRCESS INPUT


USED IN MAIN PROGRAM(S):
--------------------------
  MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

### 3.10.9  Include File Descriptions

The following list contains a purpose and description of each include file listed in 3.10.4 as specified in the source code.  The language it is written in is also given.

FORM PROCESSOR Include File Description


FILE NAME: BITS
PURPOSE:   INCLUDE FILE FOR BIT MANIPULATION ROUTINES
LANGUAGE:  C

DESCRIPTION:
------------

FORM PROCESSOR Include File Description


FILE NAME: CICODE
PURPOSE:   Command Interpreter CODEs
LANGUAGE:  VAX-11 COBOL

DESCRIPTION:
------------


   IDENTIFICATION: CICODE

   DESCRIPTION:
      THESE ARE COMMAND INTERPRETER CODES.
   INFORMATION:
      TYPE: (C-COBOL, IC-COBOL COPY) IC
      SUBSYSTEM: UI-CI
      CONFIGURATION ITEM ID:

      DESIGNED BY: S. L. BARKER
      START DATE: 1/18/83
      FINISH DATE: 1/18/83

      PROGRAMMED BY: S. L. BARKER
      START DATE: 1/18/83
      FINISH DATE: 1/18/83

      UPDATED 8/24/83 TO COMBINE WITH UICODE.INC
      UPDATED 8/25/83 TO ACCOMMODATE NEW MESSAGE LINE CODE

FORM PROCESSOR Include File Description


FILE NAME: CTLCHR
PURPOSE:    CONTROL CHARACTERS
LANGUAGE:   C

DESCRIPTION:
-------------

  DESCRIPTION
      DEFINITIONS OF ALL CONTROL CHARACTERS TO AVOID CHARACTER
                        SET
      DEPENDENCIES.

FORM PROCESSOR Include File Description


FILE NAME: CURSORI
PURPOSE:    CURSOR description
LANGUAGE:   VAX-11 COBOL

DESCRIPTION:
------------


   IDENTIFICATION: CURSOR

   DESCRIPTION:
      THIS IS THE ORACLE CURSOR DESCRIPTION.
   INFORMATION:
      TYPE: (C-COBOL, IC-COBOL COPY) IC
      SUBSYSTEM: UI
      CONFIGURATION ITEM ID:

      DESIGNED BY: S. L. BARKER

FORM PROCESSOR Include File Description

FILE NAME: DBASEI
PURPOSE:    DATABASE ITERFACE
LANGUAGE:   C

DESCRIPTION:
------------

DESCRIPTION
    INCLUDE FILE FOR DATA BASE INTERFACE CALLS

FORM PROCESSOR Include File Description

FILE NAME: FFFV2
PURPOSE:   FORM FILE FORMAT - VERSION 2
LANGUAGE:  C

DESCRIPTION:
------------

DESCRIPTION
    RECORD LAYOUTS FOR THE BINARY FORM DEFINITION FILE

FORM PROCESSOR Include File Description

FILE NAME: FPCODE
PURPOSE:   FORM PROCESSOR RETURN CODES
LANGUAGE:  C

DESCRIPTION:
------------

FORM PROCESSOR Include File Description


FILE NAME: FPD
PURPOSE:   FORM PROCESSOR DATA
LANGUAGE:  C

DESCRIPTION:
------------

    DESCRIPTION
        DATA DEFINITIONS FOR ALL FORM PROCESSOR (INCLUDING
                        MONITER)DATA.

FORM PROCESSOR Include File Description

FILE NAME: FPDINI
PURPOSE: FPD INITIALIZATION
LANGUAGE: C

DESCRIPTION:
------------

DESCRIPTION
INITIALIZED VERSION OF UID FOR INCLUSION IN MAIN PROGRAM.

FORM PROCESSOR Include File Description

FILE NAME: FPEMSG
PURPOSE:   FORM PROCESSOR ERROR MESSAGES
LANGUAGE:  C

DESCRIPTION:
------------

   DESCRIPTION

FORM PROCESSOR Include File Description


FILE NAME: FPPARM
PURPOSE:   FORM PROCESSOR PARAMETERS
LANGUAGE:  C

DESCRIPTION:
------------

    DESCRIPTION: THESE DATA DEFINITIONS ARE USED
                 IN THE FORM PROCESSOR ROUTINES.

FORM PROCESSOR Include File Description

FILE NAME: FUNCTS
PURPOSE:   FUNCTION DEFINITIONS
LANGUAGE:  C

DESCRIPTION:
------------

DESCRIPTION
    DEFINES THE MNEMONIC VIRTUAL TERMINAL COMMAND FUNCTIONS.
    AND DEFINES STRUCTURE FOR PARSING VTI MESSAGE BUFFER.

FORM PROCESSOR Include File Description


FILE NAME: NTM
PURPOSE:   NTM INTERFACE INCLUDE FILE
LANGUAGE:  C

DESCRIPTION:
------------

   DESCRIPTION
   INCLUDE FILE FOR NTM INTERFACE

FORM PROCESSOR Include File Description


FILE NAME: ORACLE
PURPOSE:   data delcarations for programs that access ORACLE
LANGUAGE:  VAX-11 COBOL

DESCRIPTION:
------------


   DESCRIPTION:
      THESE ARE DATA DECLARATIONS THAT ARE COMMONLY USED
      IN PROGRAMS THAT ACCESS ORACLE.
   INFORMATION:
      TYPE: (C-COBOL, IC-COBOL COPY) IC
      SUBSYSTEM: UI
      CONFIGURATION ITEM ID:

      DESIGNED BY: S. L. BARKER
      START DATE: 1/17/83
      FINISH DATE: 1/17/83

      PROGRAMMED BY: S. L. BARKER
      START DATE: 1/17/83
      FINISH DATE: 1/24/83

FORM PROCESSOR Include File Description

FILE NAME: ORCODE
PURPOSE:   ORacle CODEs
LANGUAGE:  VAX-11 COBOL

DESCRIPTION:
------------

FORM PROCESSOR Include File Description


FILE NAME: STDTYP
PURPOSE:   STANDARD TYPE DEFINITIONS
LANGUAGE:  C

DESCRIPTION:
------------

DESCRIPTION
     THIS FILE ENSURES THAT THE FOLLOWING STANDARD TYPES ARE
                    AVAILABLE:
          FLOAT     - SINGLE PRECISION FLOAT
          DOUBLE    - DOUBLE PRECISION FLOAT

          LONG      - 32 BIT (OR LARGER) SIGNED INTEGER
          LBITS     - 32 BITS (OR MORE) FOR BIT MANIPULATION

          INT       - NATURAL SIZE SIGNED INTEGER
          UNSIGNED  - NATURAL SIZE UNSIGNED INTEGER
          BOOL      - NATURAL SIZE LOGICAL (ZERO / NON-ZERO ONLY)

          SHORT     - 16 BIT (OR LARGER) SIGNED INTEGER
          USHORT    - 16 BIT (OR LARGER) UNSIGNED INTEGER
          BITS      - 16 BITS (OR MORE) FOR BIT MANIPULATION

          CHAR      - SINGLE MACHINE CHARACTER (REAL CHARACTERS
                        ALWAYS POSITIVE)
          TINY      - 8 BIT (OR LARGER) SIGNED INTEGER
          UTINY     - 8 BIT (OR LARGER) UNSIGNED INTEGER
          TBITS     - 8 BITS (OR MORE) FOR BIT MANIPULATION
          TBOOL     - 8 BIT (OR LARGER) LOGICAL (ZERO / NON-ZERO
                        ONLY)

          METACHAR  - 16 BIT (OR LARGER) AUGMENTED CHARACTER
                        (SIGNED)

          VOID      - FUNCTION THAT RETURNS NO VALUE

          FORTRAN   - STORAGE CLASS FOR FOREIGN (NON-C) ROUTINES
                        OR C ROUTINES
                      WHICH ARE CALLABLE FROM FOREIGN ROUTINES

     SINCE NOT ALL COMPILERS SUPPORT USHORT, TINY, AND UTINY,
                    THE FUNCTIONS

USHORT( ), TINY( ), AND UTINY( ) SHOULD BE USED WHENEVER
REFERENCING THEM.

IN ADDITION, THE FOLLOWING UTILITY MACROS ARE DEFINED:
    LURSHIFT(N, B) - UNSIGNED LONG RIGHT SHIFT
    MAX(A, B)      - MAXIMUM OF A AND B
    MIN(A, B)      - MINIMUM OF A AND B

FORM PROCESSOR Include File Description

ABS(A)          - ABSOLUTE VALUE OF A
STRASN(A, B)    - TRANSPORTABLE A = B FOR STRUCTURES
NULL            - NULL POINTER VALUE (O)
TRUE            - 1
FALSE           - O
SUCCESS         - EXIT(SUCCESS) INDICATES SUCCESSFUL
                  COMPLETION
FAILURE         - EXIT(FAILURE) INDICATES ERRORS

THE FOLLOWING SYMBOLS SHOULD BE DEFINED BASED ON THE
                  COMPILER BEING USED:
USHORT  - COMPILER SUPPORTS UNSIGNED SHORT
TINY    - COMPILFR TREATS CHAR AS SIGNED
UTINY   - CHAR IS SIGNED AND COMPILER SUPPORTS
          UNSIGNED CHAR
VOID    - COMPILER SUPPORTS VOID
FORTRAN - COMPILER SUPPORTS FORTRAN
STRASN  - DEFINE APPROPRIATE MACRO
SUCCESS - DEFINE APPROPRIATE VALUE IF NOT O
FAILURE - DEFINE APPROPRIATE VALUE IF NOT 1

FORM PROCESSOR Include File Description

FILE NAME: UISFM
PURPOSE:    UIS FORM
LANGUAGE:   C

DESCRIPTION:
------------

FORM PROCESSOR Include File Description

FILE NAME: VTICOM
PURPOSE:   VTI COMMUNICATION DEFINITIONS
LANGUAGE:  C

DESCRIPTION:
------------

DESCRIPTION

### 3.10.10  Hierarchy Chart

The following hierarchy charts show the relationships between all of the modules mentioned in the above documentation. A module may call a subroutine several times within its code, but the call will only be shown once as a single relationship on this hierarchy chart.  All modules shown at the top of the first page are considered Main Programs as described in section 3.10.1 above.

There is an internal paging scheme as marked by the numbers in the upper right corner of each page.  An index after the last page of the chart shows where a routine and its calls are first defined.  If a routine has no page reference, it either makes no calls or is an external routine.  A continuation box on the end of a tree limb shows where that the tree continues on the page numbered mentioned.  A number in a box with a routine name points to the page where the routine is further defined within the hierarchy tree.  If there is no number in a box, the routine either makes no calls or is an external routine.

```
                                                                    1
+-----------+   +------+   +------+   +------+   +------+   +------+
|MONITR/MAIN|   |PRNDSP|   |PRNOPN|   |PRNUID|   |PRNUSR|   |ADJSTR|
+---------2+    +-----3+   +--+---+   +-----4+   +-----5+   +-----6+
                              |
                              |
                              |
                           +--+---+
                           |PRNFLD|
                           +-----3+
```

```
                    +-----------+
                    |MONITR/MAIN|
                    +----+----+--+
                         |
       +---------+--------+---+----+--------+---------+
       |         |            |        |        |          |
    +--+---+  +--+---+    +--+---+  +-+-+  +--+--+  +--+---+
    |BLDCMD|  |INITAL|    |MEMCMP|  |UIS|  |ESCPY|  |(CONT)|
    +------+  +------+    +------+  +--7+  +--+--+  +-----8+
                                              |
                                              |
                                              |
                                        +---+---+
                                        |STRNCPY|
                                        +-------+
```

3

```
                    +------+
                    |PRNDSP|
                    +--+---+
                       |
                       |
                       |
                    +--+---+
                    |PRNFLD|
                    +--+---+
                       |
     +----------+----------+----------+----------+
     |          |          |          |          |
  +--+---+  +--+---+   +--+---+   +--+---+   +--+---+
  |PRNFLD|  |DOWIND|   |DOITEM|   |DOATTR|   |PRINTF|
  +-----3+  +------+   +------+   +------+   +------+
```

4

```
                    +------+
                    |PRNUID|
                    +--+---+
                       |
         +---------+-+-----------+
         |           |           |
      +--+---+    +--+--+      +--+--+
      |PRINTF|    |PRNPD|      |PRNAP|
      +------+    +--+--+      +--+--+
                     |            |
                  +---+----+      |
                  :        :      |
               +--+--+  +--+---+  +--+---+
               |PRNAP|  |PRINTF|  |PRINTF|
               +----4+  +------+  +------+
```
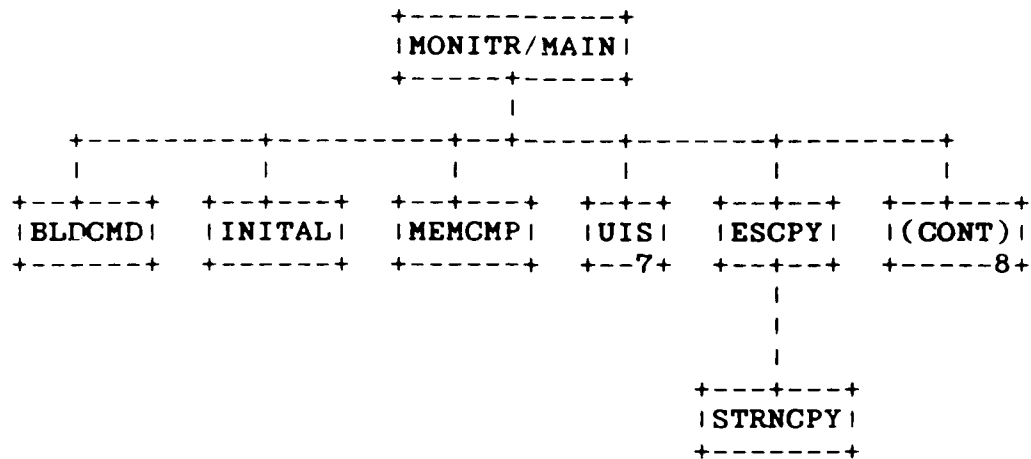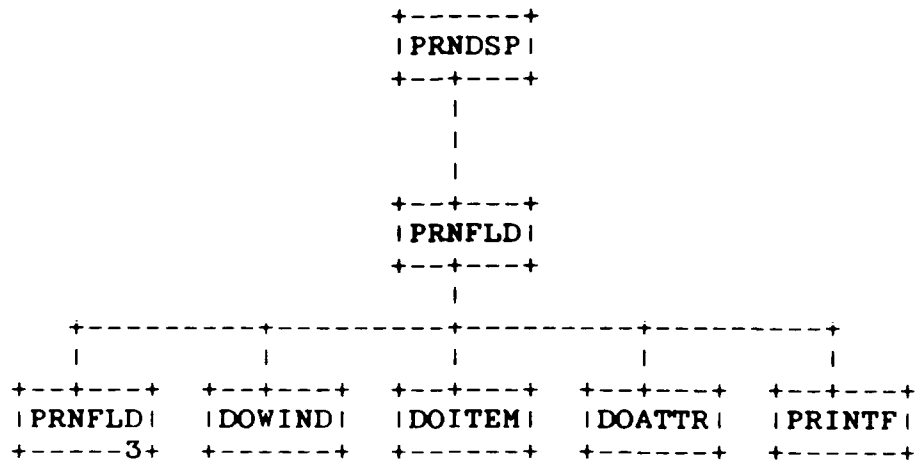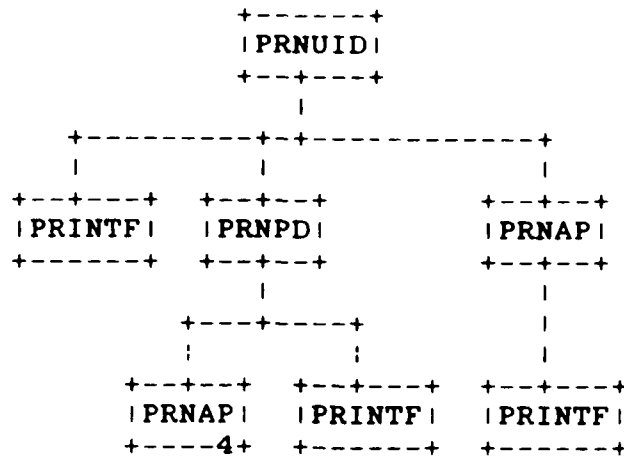
5

```
              +------+
              |PRNUSR|
              +--+---+
                 |
      +--------+--------+
      |        |        |
   +--+--+  +--+--+  +--+---+
   |PRNPD|  |PRNAP|  |PRINTF|
   +----4+  +----4+  +------+
```

6

```
          +------+
          |ADJSTR|
          +--+---+
             |
          +---+---+
          |       |
       +-+-+   +--+---+
       |ABS|   |ADJSTR|
       +---+   +-----6+
```

```
                         +---+
                         |UIS|
                         +-+-+
                           |
        +-----------+-----------+-+-----------+-----------+
        |           |           |             |           |
    +--+---+    +--+---+    +----+----+    +----+----+   +--+---+
    |OPNFRM|    |MEMCMP|    |UIS/PRCWND|   |UIS/FLWNST|  |(CONT)|
    +-----9+    +------+    +--------10+   +--------11+  +----12+
```

```
                           +-----------+
                           |MONITR/MAIN|
                           +-----+-----+
                                 |
        +----------+----------+--+----+---------+---------+
        |          |          |       |         |         |
    +--+---+   +--+---+   +--+--+  +--+---+  +-+--+   +--+---+
    |(CONT)|   |SFPDAP|   |RMVAP|  |CALLFP|  |PUTW|   |(CONT)|
    +-----2+   +--+---+   +---13+  +----14+  +----+   +----15+
                  |
           +---------+---------+
           |         |         |
       +--+--+   +--+---+   +--+---+
       |ESCPY|   |STRCMP|   |SYSMSG|
       +----2+   +------+   +----65+
```

3-363

```
                              +------+
                              |OPNFRM|
                              +--+---+
                                 |
        +---------+---------+---------+---------+---------+
        |         |         |         |         |
    +--+--+   +--+---+   +--+---+   +--+---+   +--+---+
    |ESCPY|   |STRUPC|   |GOFPTR|   |SYSMSG|   |(CONT)|
    +----2+   +------+   +--+---+   +----65+   +----16+
                            |
                            |
                            |
                         +--+---+
                         |STRCMP|
                         +------+
```

10

```
                    +----------+
                    |UIS/PRCWND|
                    +----+-----+
                         |
    +---------+--------++--------+--------+
    |         |         |         |        |
+--+---+  +--+---+  +---+---+  +--+--+  +--+---+
|CHGPRC|  |PMSGLS|  |SPRINTF|  |MATOI|  |(CONT)|
+------+  +----88+  +-------+  +-----+  +----17+
```

11

```
                              +----------+
                              |UIS/FLWNST|
                              +----+-----+
                                   |
       +----------+---------+----+----+---------+---------+
       |          |         |         |         |         |
+----+-----+  +--+--+  +--+---+  +--+---+  +---+---+  +--+---+
|UIS/FLWINF|  |ESCPY|  |MEMCMP|  |PUTATT|  |SPRINTF|  |MEMSET|
+-------18+   +----2+  +------+  +----39+  +-------+  +------+
```

```
                              +---+
                              |UIS|
                              +-+-+
                                |
        +---------+---------+----+----+---------+---------+
        |         |         |         |         |         |
     +--+---+  +--+---+  +--+---+  +--+---+  +--+---+  +--+---+
     |(CONT)|  |PMSGLC|  |DBCROL|  |PUTCUR|  |MFMSET|  |(CONT)|
     +-----7+  +----46+  +--+---+  +----19+  +------+  +----20+
                            |
           +---------+---------+---------+---------+
           |         |         |         |         |
        +--+--+   +--+--+   +--+--+   +--+--+   +--+--+
        |OSQL3|   |OBIND|   |OEXEC|   |ODFINN|  |OFETCH|
        +-----+   +-----+   +-----+   +------+  +------+
```
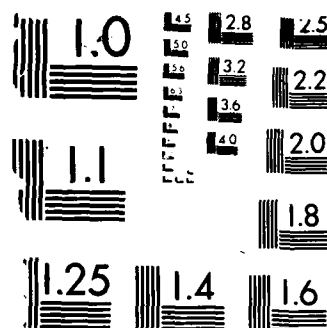
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963 A

```
                              +-----+
                              |RMVAP|
                              +--+--+
                                 |
        +----------+---------+---+---+--------+---------+
        |          |         |       |        |         |
    +---+---+  +--+---+  +-+--+  +-+--+  +--+---+  +--+---+
    |SPRINTF|  |PMSGLS|  |CBIT|  |ATOI|  |RMVFPD|  |(CONT)|
    +-------+  +----88+  +----+  +----+  +----21+  +----22+
```

14

```
                              +------+
                              |CALLFP|
                              +--+---+
                                 |
        +---------+---------+----+----+---------+---------+
        |         |         |         |         |         |
     +--+---+  +--+--+  +--+---+  +--+---+  +--+---+  +--+---+
     |MEMSET|  |MATOI|  |RPLFRM|  |RMVPAG|  |PUTLOC|  |(CONT)|
     +------+  +-----+  +----23+  +----76+  +--+---+  +----24+
                                             |
                        +---------+----+----+---------+
                        |         |         |         |
                     +--+--+  +--+---+  +--+---+  +--+---+
                     |ESCPY|  |PTHPTR|  |POSCUR|  |MEMCPY|
                     +----2+  +----62+  +----19+  +------+
```

15

```
                        +-----------+
                        |MONITR/MAIN|
                        +-----+-----+
                              |
      +---------+-------------+-+-------+---------+---------+
      |         |               |       |         |         |
   +--+---+  +--+--+         +--+---+ +--+---+  +--+---+  +--+---+
   |(CONT)|  |RMVPD|         |TRMUSR| |STRCHR|  |MAKUSR|  |(CONT)|
   +-----8+  +---25+         +--+---+ +------+  +----26+  +----27+
                               |
      +---------+---------+----+----+---------+---------+
      |         |         |         |         |         |
   +--+---+  +--+---+  +--+---+  +--+---+  +--+---+  +--+---+
   |MEMSET|  |MEMCPY|  |STRLEN|  |SIGABT|  |MEMCMP|  |(CONT)|
   +------+  +------+  +------+  +------+  +------+  +----28+
```

16

```
                          +------+
                          |OPNFRM|
                          +--+---+
                             |
    +------------+---------+--+--------+---------+
    |            |            |            |            |
 +--+---+   +------+------+  +--+---+   +--+---+   +--+---+
 |(CONT)|   |OPNFRM/PFREC|  |DELFLD|   |FCLOSE|   |(CONT)|
 +-----9+   +----------29+  +----30+   +------+   +----31+
```

17

```
                            +----------+
                            |UIS/PRCWND|
                            +----+-----+
                                 |
       +-----------------+-------+--------+--------+
       |                 |                |        |
   +--+---+          +----+-----+    +--+---+  +--+---+
   |(CONT)|          |UIS/PRCINP|    |MEMCMP|  |MEMSET|
   +----10+          +----+-----+    +------+  +------+
                          |
       +-------+-------+-------+-+-------+--------+
       |       |       |       |        |        |
    +-+-+   +-+-+  +--+---+ +--+--+  +--+---+ +--+---+
    |MAX|   |MIN|  |ULKFPD| |RMVPD|  |STRLEN| |(CONT)|
    +---+   +---+  +------+ +---25+  +------+ +----32+
```
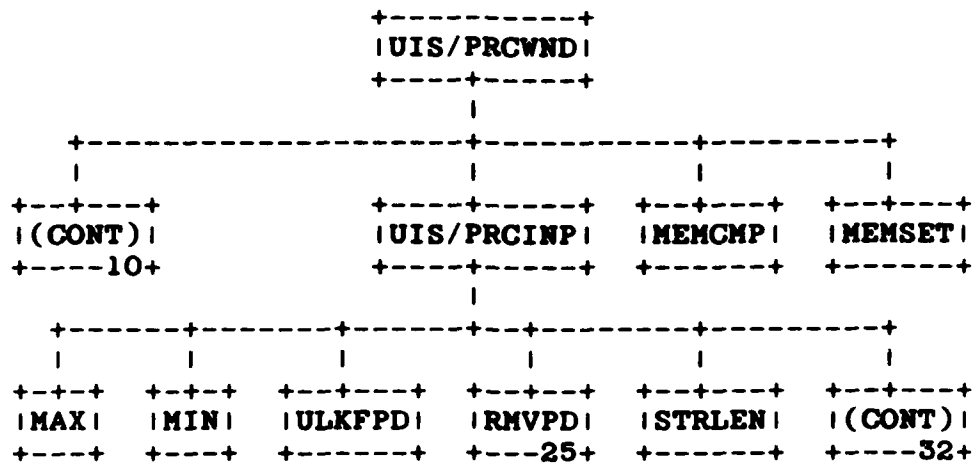
18

```
        +----------+
        |UIS/FLWINF|
        +----+-----+
             |
        +-----+------+
        |            |
   +----+-----+  +---+---+
   |UIS/FLWINF|  |SPRINTF|
   +--------18+  +-------+
```

19

```
                          +------+
                          |PUTCUR|
                          +--+---+
                             |
        +---------+-----+----+----+---------+
        |         |          |              |
     +--+--+   +--+---+    +--+---+      +--+---+
     |ESCPY|   |PTHPTR|    |POSCUR|      |MEMCPY|
     +----2+   +----62+    +--+---+      +------+
                              |
               +---------+--+------+
               |            |         |
        +------+------+   +-+-+     +-+-+
        |POSCUR/FNFITM|   |MAX|     |MIN|
        +------+------+   +---+     +---+
               |
               |
               |
        +------+------+
        |POSCUR/FNFITM|
        +----------19+
```
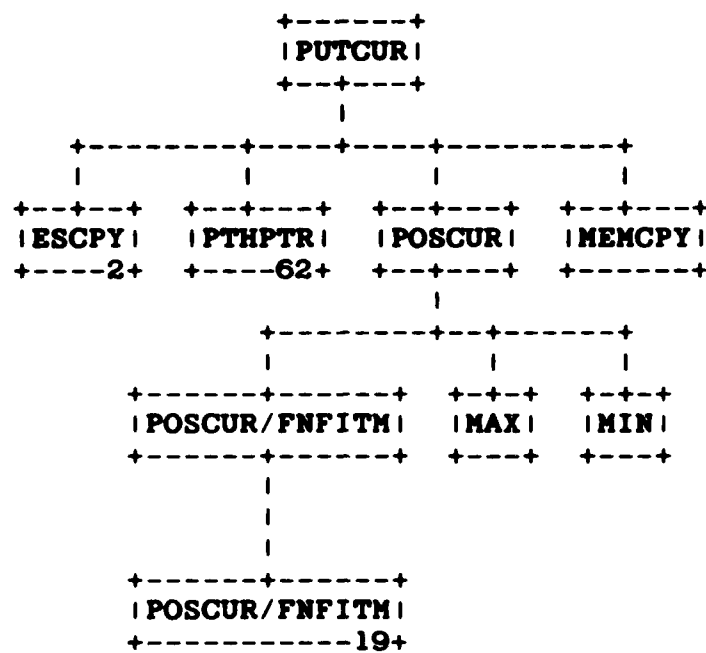
20

```
                           +---+
                           |UIS|
                           +-+-+
                             |
     +---------+----------++-----------+--------+
     |         |          |            |        |
  +--+---+  +--+---+  +----+-----+  +--+--+  +--+---+
  |(CONT)|  |MEMCPY|  |UIS/STRTAP|  |PDATA|  |(CONT)|
  +----12+  +------+  +--------33+  +---34+  +----35+
```

21

```
                                    +------+
                                    |RMVFPD|
                                    +--+---+
                                       |
        +----------+----------+----+----+--------+---------+
        |          |          |         |        |         |
    +--+---+   +--+---+    +--+---+   +--+---+  +--+---+  +--+---+
    |FREMSG|   |POSCUR|    |SPRINTF|  |PDVOTP|  |STRLEN|  |(CONT)|
    +------+   +----19+    +------+   +----35+  +------+  +----36+
```

22

```
                    +-----+
                    |RMVAP|
                    +--+--+
                       |
        +--------+---------+
        |        |         |
    +--+---+  +--+--+  +--+---+
    |(CONT)|  |CFREE|  |DSPMSG|
    +----13+  +-----+  +------+
```

```
                             +------+
                             |RPLFRM|
                             +--+---+
                                |
      +---------+----------+----+----+----------+----------+
      |         |          |         |          |          |
   +--+--+   +--+---+   +--+---+   +--+---+   +--+---+   +--+---+
   |ESCPY|   |PTHPTR|   |SYSMSG|   |DELFLD|   |COPFRM|   |(CONT)|
   +----2+   +----62+   +----65+   +----30+   +----90+   +----37+
```

```
                    +------+
                    |CALLFP|
                    +--+---+
                       |
    +---------+--------+--+-----+--------+--------+
    |         |           |           |          |          |
 +--+---+  +--+---+    +--+---+    +--+---+   +--+--+    +--+---+
 |(CONT)|  |PUTBAK|    |PUTATT|    |PARFQN|   |GPAGE|    |(CONT)|
 +----14+  +----38+    +----39+    +----40+   +---41+    +----42+
```

```
                          +-----+
                          |RMVPD|
                          +--+--+
                             |
         +---------+------+------+---------+
         |         |      |      |         |
      +--+---+  +--+--+  +--+--+  +--+--+
      |FCLOSE|  |RMVFPD|  |TRMDRV|  |CFREE|
      +------+  +----21+  +--+---+  +-----+
                             |
         +---------+--------+---+-----+--------+---------+
         |         |        |         |        |         |
      +--+---+  +--+--+  +--+--+  +--+--+  +--+---+  +--+---+
      |MEMSET|  |MEMCPY|  |STRLEN|  |NSEND|  |MEMCMP|  |SYSMSG|
      +------+  +------+  +------+  +-----+  +------+  +----65+
```

26
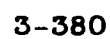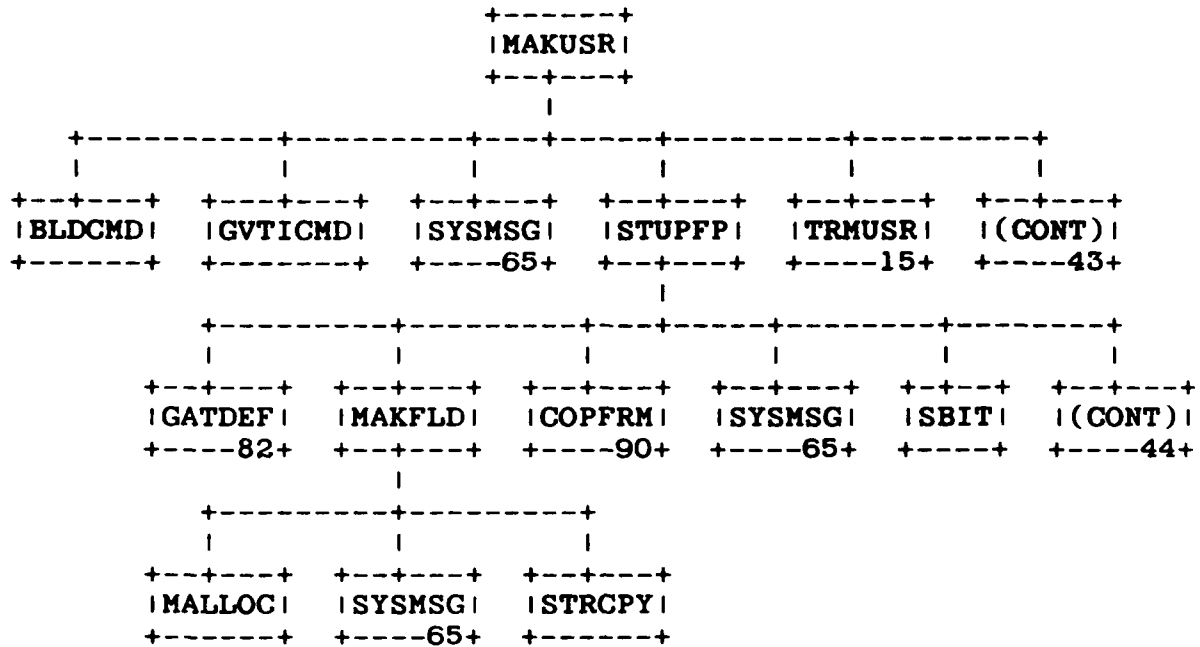
```
                                  +------+
                                  |MAKUSR|
                                  +--+---+
                                     |
         +---------+---------+----+----+---------+---------+
         |         |         |         |         |         |
     +--+---+  +---+---+  +--+---+  +--+---+  +--+---+  +--+---+
     |BLDCMD|  |GVTICMD|  |SYSMSG|  |STUPFP|  |TRMUSR|  |(CONT)|
     +------+  +-------+  +----65+  +--+---+  +----15+  +----43+
                                       |
              +---------+---------+--+----+---------+---------+
              |         |         |         |         |         |
          +--+---+  +--+---+  +--+---+  +--+---+  +-+--+  +--+---+
          |GATDEF|  |MAKFLD|  |COPFRM|  |SYSMSG|  |SBIT|  |(CONT)|
          +----82+  +--+---+  +----90+  +----65+  +----+  +----44+
                       |
              +---------+---------+
              |         |         |
          +--+---+  +--+---+  +--+---+
          |MALLOC|  |SYSMSG|  |STRCPY|
          +------+  +----65+  +------+
```

27

```
                              +-----------+
                              |MONITR/MAIN|
                              +-----+-----+
                                    |
        +----------+----------+--+-----+-------+----------+
        |          |          |  |     |       |          |
     +--+---+   +--+---+   +---+---+  +-+-+  +--+---+   +--+---+
     |(CONT)|   |STRCMP|   |GVTICMD|  |MAX|  |ONWISC|   |(CONT)|
     +----15+   +------+   +-------+  +---+  +----45+   +----46+
```

```
                        +------+
                        |TRMUSR|
                        +--+---+
                           |
        +----------+--------++--------+--------+
        |          |         |        |        |
    +--+---+   +--+---+   +--+--+  +--+--+  +--+--+
    |(CONT)|   |SYSMSG|   |RMVAP|  |RMVPD|  |CFREE|
    +----15+   +----65+   +---13+  +---25+  +-----+
```

29

```
                        +------------+
                        |OPNFRM/PFREC|
                        +-----+------+
                              |
      +-----------------------+----+-----------+------------+
      |                       |         |            |
+-----+------+         +------+------+  +-----+------+   +--+---+
|OPNFRM/BRPNOD|        |OPNFRM/BDBUFF|  |OPNFRM/BTBUFF|  |(CONT)|
+----------47+         +----------48+   +----------49+   +----50+
```

30

```
                        +------+
                        |DELFLD|
                        +--+---+
                           |
    +----------+--------+--+--------+----------+
    |          |        |           |          |
+--+---+   +--+---+  +-+--+  +------+------+  +-+--+
|SYSMSG|   |DELFLD|  |FREE|  |DELFLD/DELEXP|  |CBIT|
+----65+   +----30+  +----+  +------+------+  +----+
                                   |
                            +-----+-----+
                            |           |
                    +------+------+  +-+--+
                    |DELFLD/DELEXP|  |FREE|
                    +----------30+  +----+
```
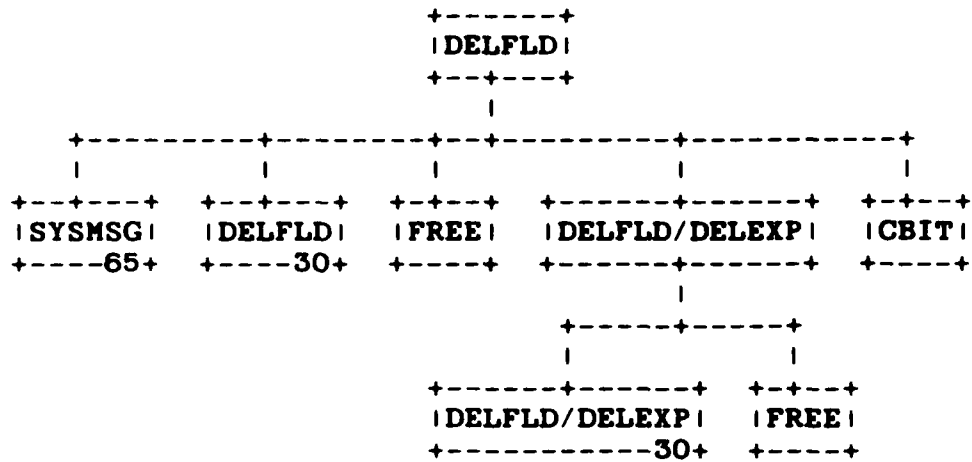
31

```
                    +------+
                    |OPNFRM|
                    +--+---+
                       |
        +----------+----+-----+---------+
        |          |          |         |
     +--+---+   +--+---+   +---+---+   +--+--+
     |(CONT)|   |MEMCPY|   |SPRINTF|   |FOPEN|
     +----16+   +------+   +-------+   +-----+
```

32

```
                       +----------+
                       |UIS/PRCINP|
                       +----+-----+
                            |
     +----------+----------+----------+-----------+
     |          |          |          |           |
  +--+---+   +--+---+   +---+---+   +----+-----+  +--+---+
  |(CONT)|   |PDVOTP|   |SPRINTF|   |UIS/STRTPD|  |(CONT)|
  +----17+   +----35+   +-------+   +-------100+  +----51+
```

33

```
                      +-----------+
                      |UIS/STRTAP |
                      +----+------+
                           |
      +---------+----------+-+-------+---------+--------+
      |         |            |       |         |        |
  +--+---+  +--+---+    +--+--+  +--+--+   +--+--+  +--+---+
  |SYSMSG|  |SIGABT|    |MAKAP|  |ISEND|   |RMVPD|  |(CONT)|
  +----65+  +------+    +--+--+  +-----+   +---25+  +----52+
                           |
      +---------+----------+-+-------+---------+--------+
      |         |            |       |         |        |
  +--+---+  +--+---+    +--+--+  +-+--+    +-+--+   +--+---+
  |CALLOC|  |SYSMSG|    |ESCPY|  |SBIT|    |ATOI|   |(CONT)|
  +------+  +----65+    +----2+  +----+    +----+   +----53+
```

34

```
                              +-----+
                              |PDATA|
                              +--+--+
                                 |
         +---------+---------+-----+-----------+
         |         |               |          |
      +--+--+   +--+---+     +-----+------+  +--+---+
      |ESCPY|   |PTHPTR|     |PDATA/PUTBUF|  |MEMCPY|
      +----2+   +----62+     +-----+------+  +------+
                                   |
           +-----------+---------+-+---------+---------+
           |           |           |         |         |
      +-----+------+ +--+---+   +---+---+  +--+---+  +--+---+
      |PDATA/PUTBUF| |SYSMSG|   |ISPRINT|  |MEMCPY|  |(CONT)|
      +----------34+ +----65+   +-------+  +------+  +----54+
```

35
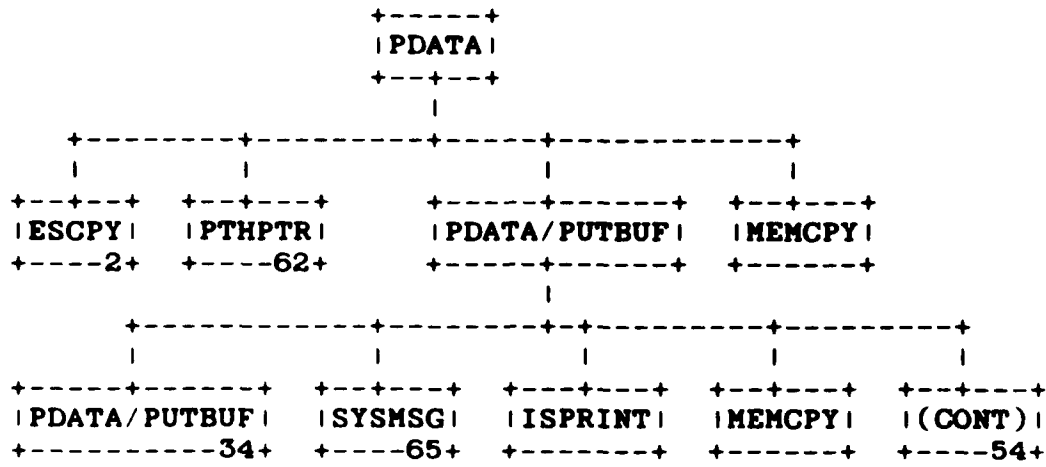
```
                              +---+
                              |UIS|
                              +-+-+
                                |
     +----------+----------+----+----+---------+---------+
     |          |          |         |         |         |
 +--+---+   +--+--+   +---+---+   +--+---+   +--+---+   +--+---+
 |(CONT)|   |ESCPY|   |SPRINTF|   |PDVOTP|   |STRLEN|   |(CONT)|
 +----20+   +----2+   +-------+   +--+---+   +------+   +----55+
                                     |
          +----------+----------+----+----+---------+---------+
          |          |          |         |         |         |
      +--+---+   +--+---+   +--+---+   +--+---+   +--+---+   +--+---+
      |MEMSET|   |MEMCPY|   |STRLEN|   |FWRITE|   |FCLOSE|   |(CONT)|
      +------+   +------+   +------+   +------+   +------+   +----56+
```

36

```
                    +------+
                    |RMVFPD|
                    +--+---+
                       |
        +-----------+--+--------+
        |           |           |
   +--+---+    +--+---+    +--+--+
   |(CONT)|    |DELFLD|    |CFREE|
   +----21+    +----30+    +-----+
```

37

```
                              +------+
                              |RPLFRM|
                              +--+---+
                                 |
         +---------------+-----+---------+
         |                     |         |
      +--+---+             +--+---+   +--+---+
      |(CONT)|             |RSVATT|   |MEMCPY|
      +----23+             +--+---+   +------+
                              |
                         +-----+------+
                         |            |
                   +------+------+  +--+---+
                   |RSVATT/RSVRST|  |STRASN|
                   +------+------+  +------+
                          |
              +---------+-+--------+
              |           |        |
        +------+------+ +--+---+ +--+---+
        |RSVATT/RSVRST| |STRASN| |MABSAT|
        +----------37+ +------+ +----39+
```

38
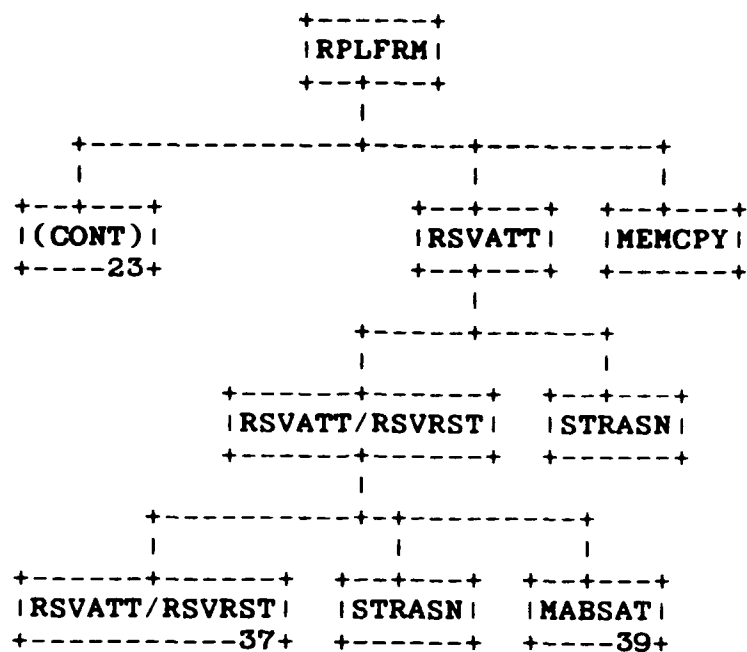
```
                            +------+
                            |PUTBAK|
                            +--+---+
                               |
     +----------+---------+----+----+---------+---------+
     |          |         |         |         |         |
  +--+--+   +--+---+   +--+---+   +--+---+   +--+---+   +--+---+
  |ESCPY|   |GATDEF|   |SYSMSG|   |MEMCPY|   |PTHPTR|   |RSVATT|
  +----2+   +----82+   +----65+   +------+   +----62+   +----37+
```

```
                            +------+
                            |PUTATT|
                            +--+---+
                               |
     +---------+---------+---+-+--------+-----------+
     |         |             |          |          |
  +--+--+  +--+---+     +--+---+  +------+------+  +--+---+
  |ESCPY|  |SYSMSG|     |PTHPTR|  |PUTATT/AABSAT|  |(CONT)|
  +----2+  +----65+     +----62+  +------+------+  +----57+
                                         |
                                 +-----+-+-----+
                                 |             |
                         +------+------+  +--+---+
                         |PUTATT/AABSAT|  |MABSAT|
                         +----------39+  +--+---+
                                            |
                                            |
                                            |
                                         +--+---+
                                         |STRASN|
                                         +------+
```
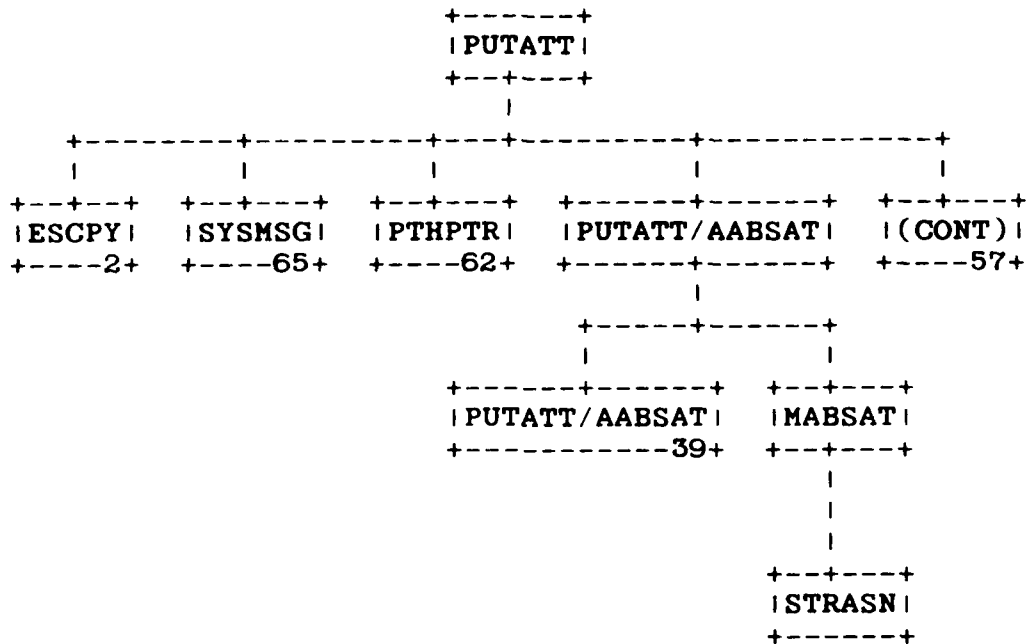
40

```
                        +------+
                        |PARFQN|
                        +--+---+
                           |
      +---------+---------+----+----+---------+---------+
      |         |         |         |         |         |
   +--+--+   +--+---+   +--+---+   +--+---+   +--+---+   +--+---+
   |ESCPY|   |STRCHR|   |MEMCPY|   |STRLEN|   |MEMSET|   |(CONT)|
   +----2+   +------+   +------+   +------+   +------+   +----58+
```

3-395

41

```
                         +-----+
                         |GPAGE|
                         +--+--+
                            |
     +---------+---------+----+----+---------+---------+
     |         |         |         |         |         |
  +--+--+   +--+---+   +--+---+   +--+---+   +--+---+   +--+---+
  |ESCPY|   |PTHPTR|   |SYSMSG|   |MEMCPY|   |STRLEN|   |MEMSET|
  +----2+   +----62+   +----65+   +------+   +------+   +------+
```

42

```
                              +------+
                              |CALLFP|
                              +--+---+
                                 |
      +---------+---------+------+------+---------+--------+
      |         |         |      |      |         |        |
   +--+---+  +--+---+   +--+---+  +--+---+  +--+--+  +--+---+
   |(CONT)|  |GVTINW|   |GETBAK|  |GETATT|  |GDATA|  |(CONT)|
   +----24+  +------+   +----59+  +--+---+  +---89+  +----60+
                                     |
      +---------+---------+----+----+--------+---------+
      |         |         |         |        |         |
   +--+--+  +--+---+   +--+---+  +--+---+  +--+---+  +--+---+
   |ESCPY|  |PTHPTR|   |SYSMSG|  |MEMSET|  |STRLEN|  |MEMCPY|
   +----2+  +----62+   +----65+  +------+  +------+  +------+
```

43

```
                             +------+
                             |MAKUSR|
                             +--+---+
                                |
       +-----------+---------+--+-----+---------+----------+
       |           |         |        |         |          |
    +--+---+   +---+---+  +--+---+  +--+---+  +--+---+   +--+---+
    |(CONT)|   |SPRINTF|  |PDVOTP|  |STRLEN|  |MAKFPD|   |(CONT)|
    +----26+   +-------+  +----35+  +------+  +--+---+   +----61+
                                                |
                                                |
                                                |
                                            +--+---+
                                            |CALLOC|
                                            +------+
```

44

```
          +-------+
          |STUPFP |
          +--+--+-+
             |
    +----------+---------+
    |          |         |
+--+---+   +--+---+   +--+--+
|(CONT)|   |STRASN|   |FFBCA|
+----26+   +------+   +-----+
```
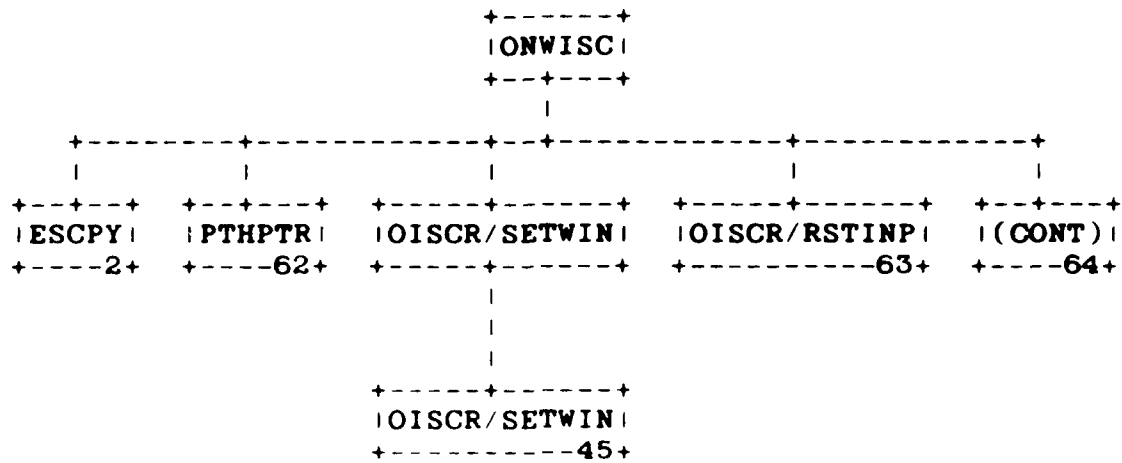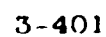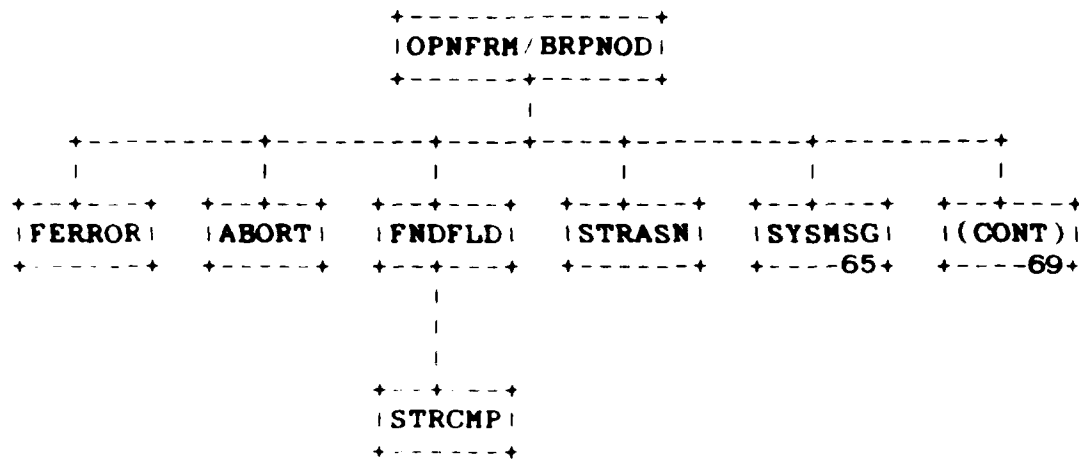
45

```
                           +------+
                           |ONWISC|
                           +--+---+
                              |
      +----------+-----------+--+----------+------------+
      |          |              |          |            |
   +--+--+   +--+---+   +-----+------+   +-----+-----+   +--+---+
   |ESCPY|   |PTHPTR|   |OISCR/SETWIN|   |OISCR/RSTINP|   |(CONT)|
   +----2+   +----62+   +-----+------+   +---------63+   +----64+
                              |
                              |
                              |
                        +-----+------+
                        |OISCR/SETWIN|
                        +---------45+
```

```
                              +----------+
                              |MONITR/MAIN|
                              +----+-----+
                                   |
        +---------+-------+--------+-------+------------+---------+
        |         |       |        |       |            |         |
    +--+---+  +--+---+  +--+-+  +--+---+  +--+---+  +--+---+
    |(CONT)|  |OUTSCR|  |FSEEK|  |PMSGLC|  |SYSMSG|  |(CONT)|
    +----27+  +--+---+  +-----+  +--+---+  +----65+  +----66+
                 |                   |
        +-----+-------+       +----+----+
        |             |       |         |
    +--+---+  +-------+------+  +--+---+  +--+---+
    |MEMCPY|  |OISCR/FVTBUF |  |FNDMSG|  |PMSGLS|
    +------+  +----------81+  +--+---+  +----88+
                                 |
        +-------------+--------+--------+-----------+
        |             |        |        |           |
    +--+---+  +------+------+  +------+------+  +--+---+
    |STRNCMP|  |FNDMSG/OUMSGF|  |FNDMSG/CODSCH|  |(CONT)|
    +-------+  +------+------+  +----------67+  +----68+
                      |
        +---------+---------+
        |         |         |
    +--+---+  +--+-+  +---+---+
    |MEMCPY|  |FOPEN|  |SPRINTF|
    +------+  +-----+  +-------+
```

```
                        +--------------+
                        |OPNFRM/BRPNOD |
                        +------+-------+
                               |
       +----------+------------+------+-----------+---------+
       |          |            |      |           |         |
   +--+---+   +--+--+     +--+---+  +--+---+   +--+---+   +--+---+
   |FERROR|   |ABORT|     |FNDFLD|  |STRASN|   |SYSMSG|   |(CONT)|
   +------+   +-----+     +--+---+  +------+   +----65+   +----69+
                            |
                            |
                         +--+---+
                         |STRCMP|
                         +------+
```

3-402

48

```
                    +------------+
                    |OPNFRM/BDBUFF|
                    +------+------+
                           |
    +----------+---------+--+--------+---------+
    |          |            |        |         |
 +--+--+   +--------+----+ +-+--+ +---+---+ +--+---+
 |FREE |   |OPNFRM/BFLDDB| |GETC| |ISCNTRL| |(CONT)|
 +-----+   +-----------70+ +----+ +-------+ +----71+
```

```
                        +-------------+
                        |OPNFRM/BTBUFF|
                        +------+------+
                               |
         +---------+-----------+-----------+---------+
         |         |           |           |         |
    +--+---+   +-+--+   +---+---+   +--+---+   +--+---+
    |FERROR|   |GETC|   |ISCNTRL|   |SYSMSG|   |MALLOC|
    +------+   +----+   +-------+   +----65+   +------+
```

50
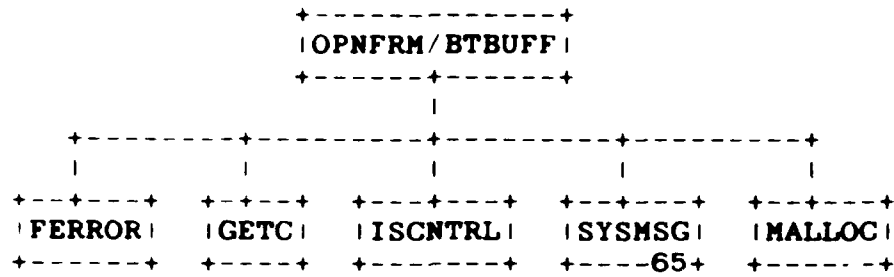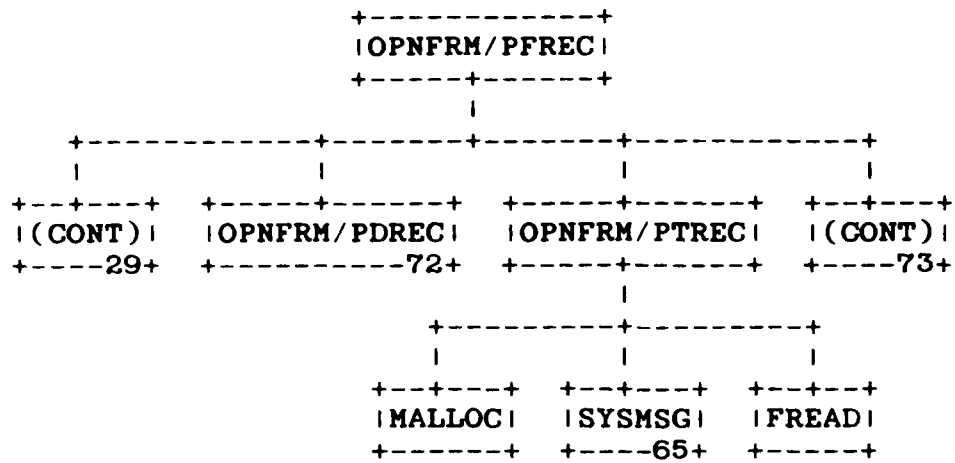
```
                       +------------+
                       |OPNFRM/PFREC|
                       +-----+------+
                             |
       +------------+--------+--------+------------+
       |            |                 |            |
   +--+---+    +-----+------+    +-----+------+    +--+---+
   |(CONT)|    |OPNFRM/PDREC|    |OPNFRM/PTREC|    |(CONT)|
   +----29+    +----------72+    +-----+------+    +----73+
                                       |
                          +--------+--------+
                          |        |        |
                      +--+---+  +--+---+  +--+--+
                      |MALLOC|  |SYSMSG|  |FREAD|
                      +------+  +----65+  +-----+
```

51

```
                         +----------+
                         |UIS/PRCINP|
                         +----+-----+
                              |
    +----------+---------+---+-----+---------+---------+
    |          |             |         |         |         |
 +--+---+   +--+---+    +--+---+   +--+--+   +--+---+   +--+---+
 |(CONT)|   |SYSMSG|    |STRCMP|   |ESCPY|   |FNFPWN|   |(CONT)|
 +----32+   +----65+    +------+   +----2+   +----97+   +----74+
```

52

```
                              +----------+
                              |UIS/STRTAP|
                              +----+-----+
                                   |
        +---------+----------+--+------+--------+--------+
        |         |          |         |        |        |
     +--+---+  +--+---+  +---+---+  +--+--+  +--+--+  +--+---+
     |(CONT)|  |PMSGLS|  |SPRINTF|  |FFBCA|  |DBCOM|  |(CONT)|
     +----33+  +----88+  +-------+  +-----+  +-----+  +----75+
```

53

```
                              +-----+
                              |MAKAP|
                              +--+--+
                                 |
        +----------+---------++---------+---------+
        |          |          |          |          |
     +--+---+   +--+---+   +--+--+    +--+---+   +--+--+
     |(CONT)|   |STUPFP|   |RMVAP|    |MAKFPD|   |CFREE|
     +----33+   +----26+   +---13+    +----43+   +-----+
```

54

```
                    +-------------+
                    | PDATA/PUTBUF |
                    +-----+-------+
                          |
      +-----------+---+----+--------+
      |           |        |        |
   +--+---+    +--+---+   +-+-+--+  +--+--+
   |(CONT)|    |MEMCMP|   |BLEN |  |CBPTR|
   +----34+    +------+   +----+   +-----+
```

55

```
                              +---+
                              |UIS|
                              +-+-+
                                |
        +---------+---------+----+----+---------+---------+
        |         |         |         |         |         |
    +--+---+  +--+---+   +--+---+   +--+---+   +--+---+   +--+---+
    |(CONT)|  |ONWISC|   |SYSMSG|   |TRMUSR|   |OUTSCR|   |(CONT)|
    +----35+  +----45+   +----65+   +----15+   +----46+   +----76+
```

```
                    +------+
                    |PDVOTP|
                    +--+---+
                       |
        +---------+---+-----+---------+
        |         |         |         |
    +--+---+  +--+---+  +--+--+  +--+---+
    |(CONT)|  |SYSMSG|  |NSEND|  |MEMCMP|
    +----35+  +----65+  +-----+  +------+
```

57

```
              +------+
              |PUTATT|
              +--+---+
                 |
       +---------+---------+
       |         |         |
    +--+---+  +--+---+  +--+---+
    |(CONT)|  |MEMCPY|  |GATDEF|
    +----39+  +------+  +----82+
```

58

```
                    + - - - - - +
                    | PARFQN |
                    + - - + - - +
                         |
        + - - - - - - - - + - - - - - - - - +
        |                |                |
    + - - + - - - +   + - - + - - - +   + - - - + - - - +
    | (CONT) |       | SYSMSG |       | STRRCHR |
    + - - - - 40+     + - - - - 65+    + - - - - - - - +
```

59

```
                              +------+
                              |GETBAK|
                              +--+---+
                                 |
      +----------+-----------+----+----+-----------+---------+
      |          |           |         |           |         |
  +--+--+    +--+---+    +--+---+    +--+---+    +--+---+    +--+---+
  |ESCPY|    |PTHPTR|    |SYSMSG|    |MEMSET|    |STRLEN|    |MEMCPY|
  +----2+    +----62+    +----65+    +------+    +------+    +------+
```

60

```
                        +------+
                        |CALLFP|
                        +--+---+
                           |
    +---------+---------+----+----+----------+---------+
    |         |         |         |          |         |
 +--+---+  +--+---+  +--+---+  +--+---+   +--+---+   +--+---+
 |(CONT)|  |CLSLDV|  |CHGLDV|  |ADDELM|   |SPRINTF|  |(CONT)|
 +----42+  +----77+  +--+---+  +----78+   +-------+  +----79+
                        |
                        |
                        |
                     +--+---+
                     |MEMCPY|
                     +------+
```

61

```
                        + - - - - - +
                        | MAKUSR |
                        + - - + - - - +
                            |
        + - - - - - - - - - + - - - - - - - - - + - - - - - - - - + - - - - - - - +
        |               |               |           |             |
    + - - + - - - +   + - - + - - +   + - - + - - +   + - - + - - +   + - - + - - - +
    | (CONT) |   | RMVPD |   | MAKPD |   | CFREE |   | CALLOC |
    + - - · - -43+   + - - -25+   + - - + - - +   + - - - - - +   + - - - - - +
                                    |
                            + - - - - + - - - - - +
                            |               |
                        + - - + - - - +   + - - + - - +
                        | CALLOC |   | ESCPY |
                        + - - - - - +   + - - - -2+
```

62

```
                            +------+
                            |PTHPTR|
                            +--+---+
                               |
         +--------+--------+---+----+--------+---------+
         |        |        |        |        |
      +--+---+ +--+---+ +---+---+ +--+---+ +--+---+
      |MALLOC| |STRASN| |ISDIGIT| |SYSMSG| |(CONT)|
      +------+ +------+ +-------+ +----65+ +----80+
```

63

```
                        +-------------+
                        |OISCR/RSTINP |
                        +-----+-------+
                              |
        +------------+--------+-+---------+---------+
        |            |          |         |         |
  +-----+-------+  +-+---+   +--+--+   +--+--+   +--+---+
  |OISCR/RSTINP |  |BLEN |   |PBPTR|   |CBPTR|   |MEMCPY|
  +----------63+  +-----+   +-----+   +-----+   +------+
```

64

```
                        +------+
                        |ONWISC|
                        +--+---+
                           |
        +----------+---------+--+--------+---------+
        |          |            |        |         |
    +--+---+  +----+-----+  +--+---+  +--+---+  +--+---+
    |(CONT)|  |OISCR/FVTBUF| |MEMCPY|  |SYSMSG|  |GATDEF|
    +----45+  +---------81+  +------+  +----65+  +----82+
```

```
                          +------+
                          |SYSMSG|
                          +--+---+
                             |
       +--------+-----------++----------+----------+
       |        |           |           |          |
    +-+--+   +--+---+    +--+---+    +---+---+   +--+---+
    |ATOI|   |FNDMSG|    |ERRPRO|    |STRNCMP|   |PMSGLC|
    +----+   +----46+    +------+    +-------+   +----46+
```

66

```
                        +----------+
                        |MONITR/MAIN|
                        +-----+-----+
                              |
       +----------+----------+--+--------+------------+
       |          |          |           |            |
    +--+---+   +--+---+   +--+---+   +-----+------+  +--+---+
    |(CONT)|   |GDVINP|   |FCLOSE|   |MONITR/GETPD|  |(CONT)|
    +----46+   +----83+   +------+   +-----+------+  +----84+
                                          |
                                     +----+----+
                                     |         |
                                  +--+---+   +--+--+
                                  |STRCMP|   |ESCPY|
                                  +------+   +----2+
```
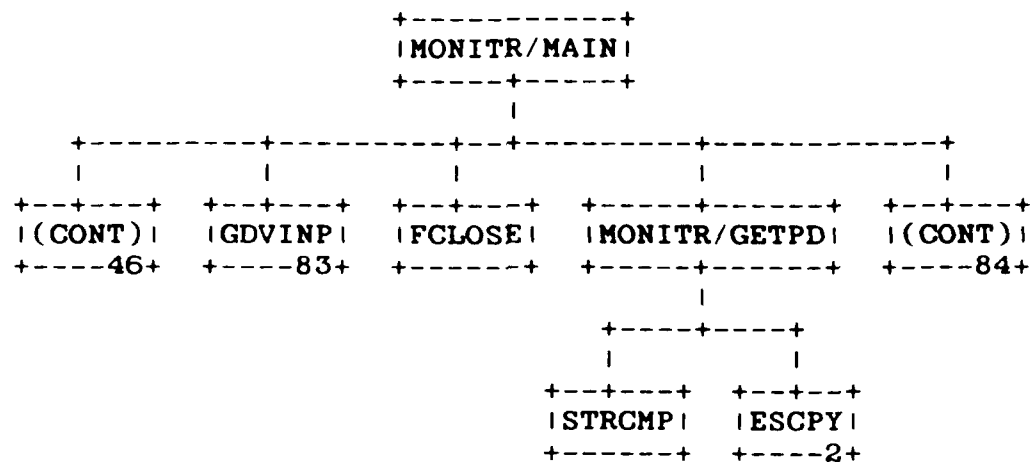
```
                    +--------------+
                    |FNDMSG/CODSCH |
                    +------+-------+
                           |
         +---------+---+----+---------+
         |             |         |         |
    +--+---+      +--+---+   +--+--+   +--+---+
    |MEMCPY|      |MEMCMP|   |FREAD|   |REWIND|
    +------+      +------+   +-----+   +------+
```

68

```
                        +------+
                        |FNDMSG|
                        +--+---+
                           |
        +----------+---+-----+---------+
        |          |         |         |
    +--+---+    +---+---+  +--+---+  +--+---+
    |(CONT)|    |SPRINTF|  |STRLEN|  |MEMSET|
    +----46+    +-------+  +------+  +------+
```

```
              +-------------+
              |OPNFRM/BRPNOD|
              +------+------+
                     |
        +------------+-----------+
        |            |           |
    +--+---+     +--+---+    +--+--+
    |(CONT)|     |MALLOC|    |FREAD|
    +----47+     +------+    +-----+
```

70

```
                    +------------ --+
                    |OPNFRM/BFLDDB|
                    +------+------+
                           |
      +----------+------+-+--------+--------+
      |                 |      |        |        |
+------+------+   +--+---+  +-+--+  +--+---+  +--+---+
|OPNFRM/BFLDDB|   |MEMCPY|  |BLEN|  |SYSMSG|  |MALLOC|
+----------70+   +------+  +----+  +----65+  +------+
```
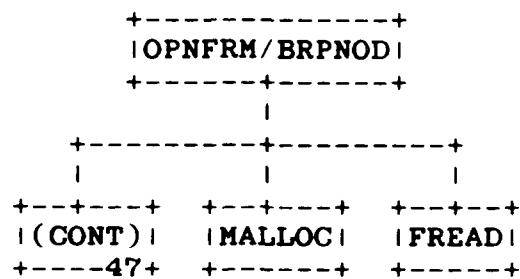
```
                  +-------------+
                  |OPNFRM/BDBUFF|
                  +------+------+
                         |
      +--------+--------++--------+--------+
      |        |        |        |         |
  +--+---+ +-+--+  +--+---+  +--+---+  +--+---+
  |(CONT)| |FEOF|  |FERROR|  |SYSMSG|  |MALLOC|
  +----48+ +----+  +------+  +----65+  +------+
```

72

```
                    +------------+
                    |OPNFRM/PDREC|
                    +-----+------+
                          |
      +-------------+--+----+--------+
      |                |         |          |
+-----+-----+    +--+--+    +--+---+    +--+--+
|OPNFRM/PARY|    |ESCPY|    |SYSMSG|    |FREAD|
+--------85+    +----2+    +----65+    +-----+
```

73

```
                        +-----------+
                        |OPNFRM/PFREC|
                        +-----+-----+
                              |
      +-----------+-----------+---+-----+-----------+---------+
      |           |               |           |           |         |
  +--+---+    +--+---+    +--+---+    +--+---+    +--+--+    +--+---+
  |(CONT)|    |MAKFLD|    |GATDEF|    |STRCMP|    |ESCPY|    |(CONT)|
  +----50+    +----26+    +----82+    +------+    +----2+    +----86+
```

```
            +----------+
            |UIS/PRCINP|
            +----+-----+
                 |
      +----------+----------+
      |          |          |
  +--+---+   +--+---+   +--+--+
  |(CONT)|   |MEMCMP|   |MATOI|
  +----51+   +------+   +-----+
```
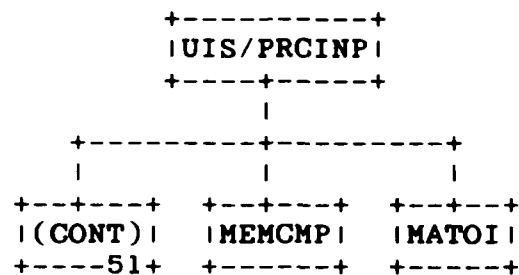
```
                    +----------+
                    |UIS/STRTAP|
                    +----+-----+
                         |
      +----------+--------++--------+----------+
      |          |         |        |          |
   +--+---+   +--+---+   +--+--+  +--+---+   +--+---+
   |(CONT)|   |STRLEN|   |ESCPY|  |DBGAPD|   |(CONT)|
   +----52+   +------+   +----2+  +------+   +----87+
```
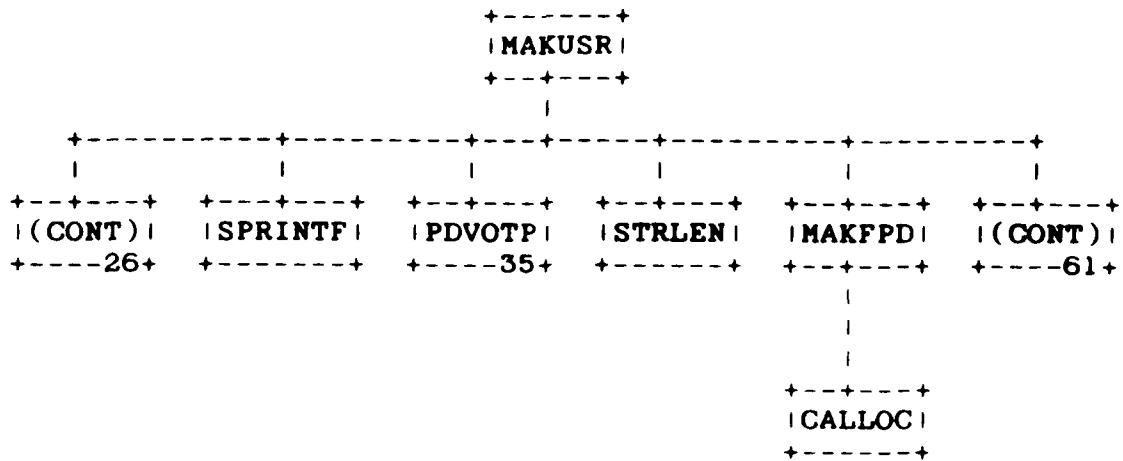
76

```
                                    +---+
                                    |UIS|
                                    +-+-+
                                      |
        +----------+----------+----+--+----+----------+--------+
        |          |               |         |          |        |
    +--+---+   +--+---+       +--+---+    +--+---+   +--+-+   +--+---+
    |(CONT)|   |PMSGLS|       |RMVPAG|    |DBCUPR|   |GDATA|   |ADDFRM|
    +----55+   +----88+       +--+---+    +------+   +---89+   +----90+
                                 |
        +----------+----------+--+--+------+--------+--------+
        |          |             |         |          |        |
    +--+--+    +--+---+       +--+---+   +--+---+   +-+-+   +--+---+
    |ESCPY|    |PTHPTR|       |SYSMSG|   |DELFLD|   |MAX|   |(CONT)|
    +----2+    +----62+       +----65+   +----30+   +---+   +----91+
```

```
                    +------+
                    |CLSLDV|
                    +--+---+
                       |
         +-----------+---------+
         |           |         |
     +--+---+    +--+---+   +--+---+
     |FNFPWN|    |RMVFPD|   |MEMCPY|
     +----97+    +----21+   +------+
```

78

```
                        +------+
                        |ADDELM|
                        +--+---+
                           |
     +---------+---------+---+---+--------+---------+
     |         |         |       |        |         |
  +--+--+  +--+---+  +--+---+  +-+-+  +--+---+  +--+---+
  |ESCPY|  |PTHPTR|  |MEMCPY|  |ABS|  |SYSMSG|  |(CONT)|
  +----2+  +----62+  +------+  +---+  +----65+  +----92+
```

79

```
                        +------+
                        |CALLFP|
                        +--+---+
                           |
    +---------+---------+---+----+---------+---------+
    |         |         |        |         |         |
+--+---+  +--+---+  +--+--+  +--+---+  +--+---+  +--+---+
|(CONT)|  |STRLEN|  |NSEND|  |MEMCMP|  |SYSMSG|  |(CONT)|
+----60+  +------+  +-----+  +------+  +----65+  +----93+
```

80

```
                            +------+
                            |PTHPTR|
                            +--+---+
                               |
      +------------+---------+-+---------+----------+
      |            |         |           |          |
   +--+---+   +-----+------+  +-+--+   +---+---+   +---+---+
   |(CONT)|   |PTHPTR/FIELD|  |FREE|   |ISALNUM|   |TOUPPER|
   +----62+   +---------94+   +----+   +-------+   +-------+
```

81

```
                  +------------+
                  |OISCR/FVTBUF|
                  +-----+------+
                        |
      +----------+------+-----+------------+
      |          |            |            |
   +--+---+   +--+---+   +------+------+  +--+---+
   |DSPMSG|   |PDVOTP|   |OISCR/PROCWIN|  |(CONT)|
   +------+   +----35+   +------+------+  +----95+
                               |
         +------------+--------+------+------------+
         |            |               |            |
   +------+------+  +--+---+   +------+------+   +--+---+
   |OISCR/PROCFLD|  |STRLEN|   |OISCR/ADDCMD|   |(CONT)|
   +----------95+  +------+   +---------108+   +----96+
```

```
                          +------+
                          |GATDEF|
                          +--+---+
                             |
                +------------+---------+
                |            |         |
            +--+---+     +--+---+   +--+---+
            |STRUPC|     |STRCMP|   |SYSMSG|
            +------+     +------+   +----65+
```
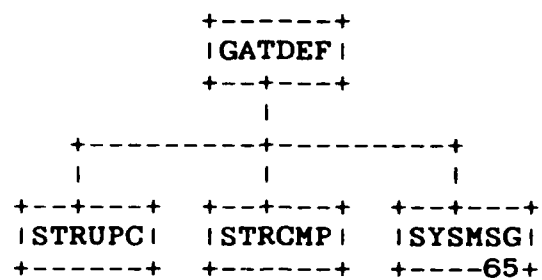
```
                              +------+
                              |GDVINP|
                              +--+---+
                                 |
      +---------+---------+----+---+---------+---------+
      |         |         |        |         |         |
   +--+---+  +--+---+  +-+--+  +--+---+   +--+---+   +--+---+
   |BLDCMD|  |MEMSET|  |PUTW|  |FWRITE|   |SYSMSG|   |(CONT)|
   +------+  +------+  +----+  +------+   +----65+   +----97+
```

84

```
                      +-----------+
                      |MONITR/MAIN|
                      +-----+-----+
                            |
    +---------+---------+---+-----+--------+--------+
    |         |         |         |        |        |
 +--+---+  +-+--+  +--+---+  +--+--+  +-+--+  +--+---+
 |(CONT)|  |FEOF|  |FERROR|  |FREAD|  |GETW|  |(CONT)|
 +----66+  +----+  +------+  +-----+  +----+  +----98+
```

85

```
                        +-----------+
                        |OPNFRM/PARY|
                        +-----+-----+
                              |
        +-----------+-----+---+---+---------+---------+
        |           |         |       |         |         |
  +-----+-----+  +-+-+  +-+-+  +--+---+  +--+---+  +--+---+
  |OPNFRM/PARY|  |ABS|  |MAX|  |MAKFLD|  |GATDEF|  |(CONT)|
  +--------85+  +---+  +---+  +----26+  +----82+  +----99+
```

86

```
          +-------------+
          |OPNFRM/PFREC|
          +-----+------+
                |
     +----------+----------+
     |          |          |
  +--+---+   +--+---+   +--+--+
  |(CONT)|   |SYSMSG|   |FREAD|
  +----73+   +----65+   +-----+
```

```
                        +----------+
                        |UIS/STRTAP|
                        +----+-----+
                             |
      +------------+---------+-+---------+---------+
      |            |           |         |         |
  +--+---+   +----+----+   +--+---+   +--+---+   +--+---+
  |(CONT)|   |UIS/STRTPD|  |PMSGLC|   |DBCFNC|   |MEMCMP|
  +----75+   +-------100+  +----46+   +--+---+   +------+
                                         |
                   +--------+---------+--+------+-----------+
                   |        |         |         |           |
               +--+---+  +--+---+  +--+---+  +--+---+   +--+---+
               |OSQL3 |  |OBIND |  |OEXEC |  |ODFINN|   |OFETCH|
               +------+  +------+  +------+  +------+   +------+
```
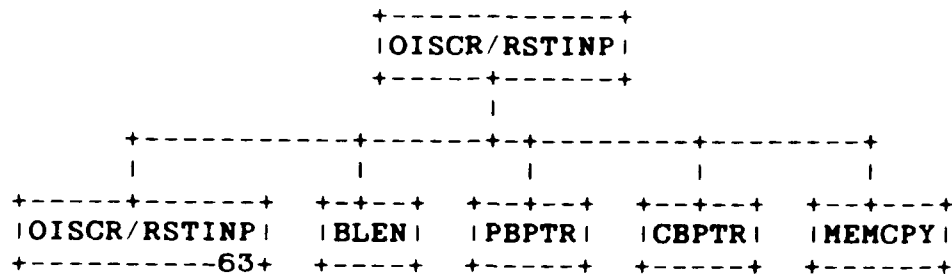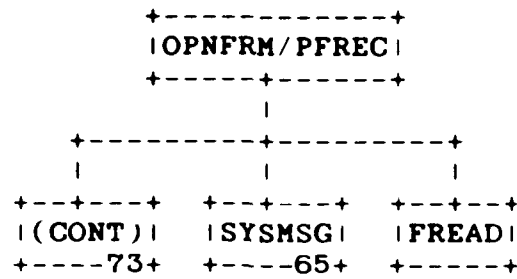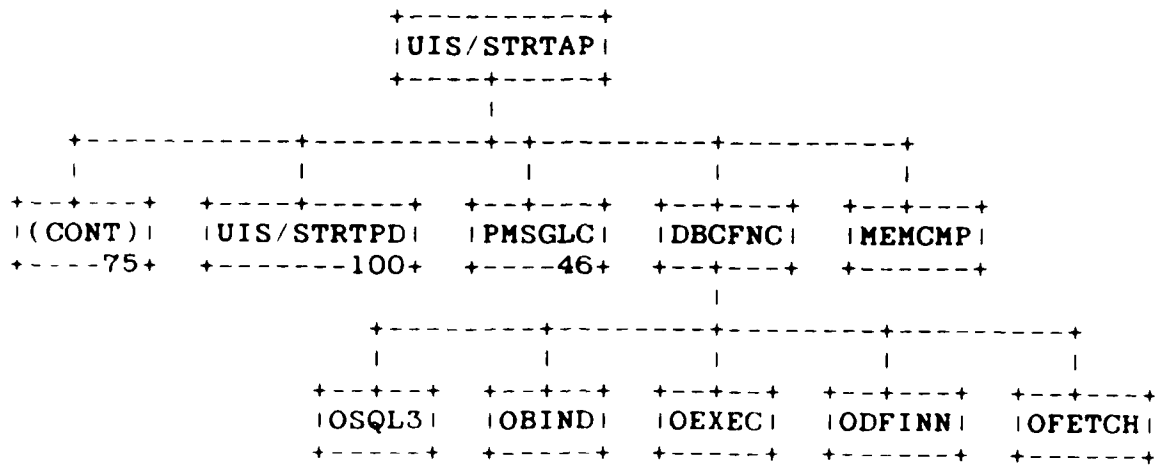
```
                          +------+
                          |PMSGLS|
                          +--+---+
                             |
        +---------+---------+----+---+---------+----------+
        |         |         |        |         |          |
     +--+---+  +--+---+  +--+--+  +--+---+  +--+---+   +---+---+
     |MALLOC|  |FUISWN|  |ESCPY|  |STRLEN|  |MEMSET|   |ISPRINT|
     +------+  +------+  +----2+  +------+  +------+   +-------+
```

89

```
                              +-----+
                              |GDATA|
                              +--+--+
                                 |
       +--------------+----------+----------+----------+
       |              |          |          |          |
    +--+--+       +--+---+   +----+------+  +--+---+  +--+---+
    |ESCPY|       |PTHPTR|   |GDATA/GETBUF| |SYSMSG|  |MEMCPY|
    +----2+       +----62+   +-----+------+ +----65+  +------+
                                    |
                    +--------------+--+------+--------+
                    |              |         |        |
             +------+------+    +--+--+   +--+--+  +--+---+
             |GDATA/GETBUF |    |BLEN |   |CBPTR|  |MEMCPY|
             +----------89+    +----+    +-----+  +------+
```

90

```
                              +------+
                              |ADDFRM|
                              +--+---+
                                 |
          +---------+---------+--+------+---------+
          |         |         |         |         |
      +--+--+   +--+---+   +--+---+   +--+---+   +--+---+
      |ESCPY|   |PTHPTR|   |SYSMSG|   |COPFRM|   |MEMCPY|
      +----2+   +----62+   +----65+   +--+---+   +------+
                                         |
             +---------+---------+----+--+----+---------+---------+
             |         |         |         |         |         |
         +--+--+   +--+---+   +--+---+   +--+---+   +--+---+   +--+---+
         |ESCPY|   |STRUPC|   |GOFPTR|   |SYSMSG|   |COPFLD|   |(CONT)|
         +----2+   +------+   +-----9+   +----65+   +---102+   +---101+
```
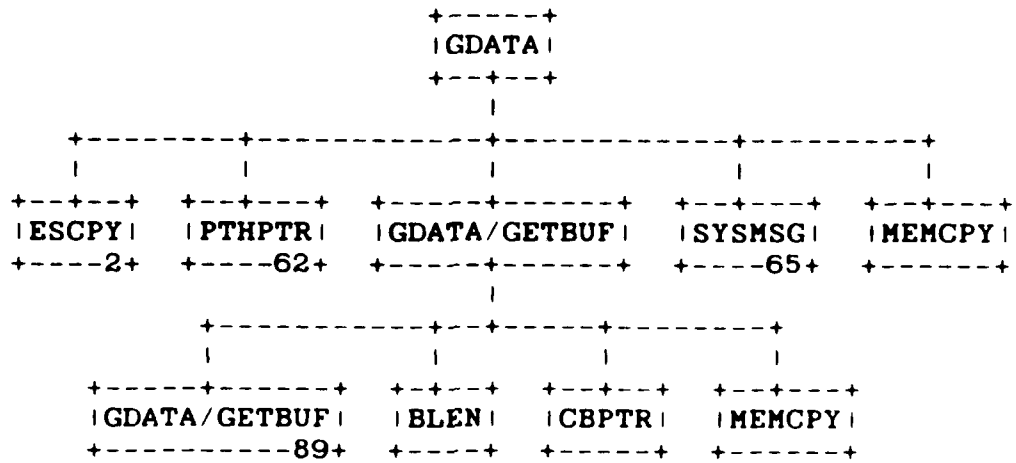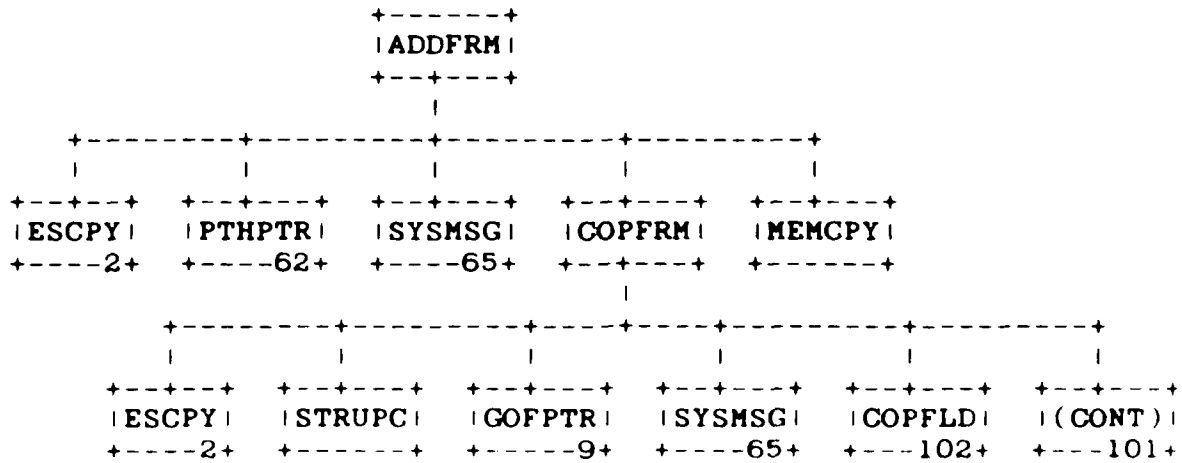
91

```
           +------+
           |RMVPAG|
           +--+---+
              |
     +---------+---------+
     |         |         |
  +--+---+  +--+---+  +--+---+
  |(CONT)|  |STRASN|  |MEMCPY|
  +----76+  +------+  +------+
```

92

```
                              +------+
                              |ADDELM|
                              +--+---+
                                 |
        +---------+---------+----+----+----------+---------+
        |         |         |         |          |         |
     +--+---+  +-+-+    +--+---+  +--+---+   +--+---+   +--+---+
     |(CONT)|  |MAX|    |RSVEXP|  |COPFLD|   |STRCMP|   |GOFPTR|
     +----78+  +---+    +--+---+  +---102+   +------+   +-----9+
                           |
              +-----------+--+------+---------+
              |           |         |         |
     +--------+-------+  +--+---+  +--+---+  +--+---+
     |RSVEXP/BLDEXP|    |SYSMSG|  |RSVEXP|  |CMPFLD|
     +----------103+    +----65+  +----92+  +---104+
```

93

```
                              + - - - - - +
                              | CALLFP |
                              + - - + - - - +
                                    |
        + - - - - - - - - - + - - - - - - - - - + - - - - + - - - + - - - - - - - - - - - + - - - - - - - - - +
        |                   |                   |        |                   |                   |
   + - - + - - - +     + - - + - - - +     + - - + - - - +     + - - + - - - +     + - - + - - - +     + - - + - - - +
   | (CONT) |     | TERMVT |     | SNDVTI |     | PUTCUR |     | PMSGLC |     | (CONT) |
   + - - - - 79 +     + - - + - - - +     + - - - - - - +     + - - - - 19 +     + - - - - 46 +     + - - - 105 +
                           |
                           |
                     + - - + - - - +
                     | MEMCPY |
                     + - - - - - - +
```

94

```
                              +------------+
                              |PTHPTR/FIELD|
                              +-----+------+
                                    |
            +-----------------+-----+--------+------------+
            |                 |              |            |
      +-----+------+    +-----+------+  +-----+-----+  +--+---+
      |PTHPTR/ITEM |    |PTHPTR/WINDOW|  |PTHPTR/FORM|  |(CONT)|
      +-----+------+    +----------106+  +-----+-----+  +---107+
            |                                 |
            |                           +-----+------+
            |                           |            |
      +-----+------+              +-----+------+  +-----+------+
      |PTHPTR/FOUND|              |PTHPTR/FIELD|  |PTHPTR/FOUND|
      +-----+------+              +---------94+  +---------94+
            |
            |
      +--+---+
      |STRCMP|
      +------+
```

95

```
                    +-------------+
                    |OISCR/FVTBUF |
                    +-----+-------+
                          |
        +-----------------+-+-----------+----------+
        |                   |           |          |
   +--+---+          +------+------+  +--+---+   +--+---+
   |(CONT)|          |OISCR/PROCFLD|  |STRLEN|   |(CONT)|
   +----81+          +------+------+  +------+   +---108+
                            |
        +----------+--------+--------+----------+
        |          |        |        |          |
   +--+---+   +--+--+   +-+--+   +--+---+   +--+---+
   |POSCUR|   |CBPTR|   |BLEN|   |STRCAT|   |(CONT)|
   +----19+   +-----+   +----+   +------+   +---109+
```
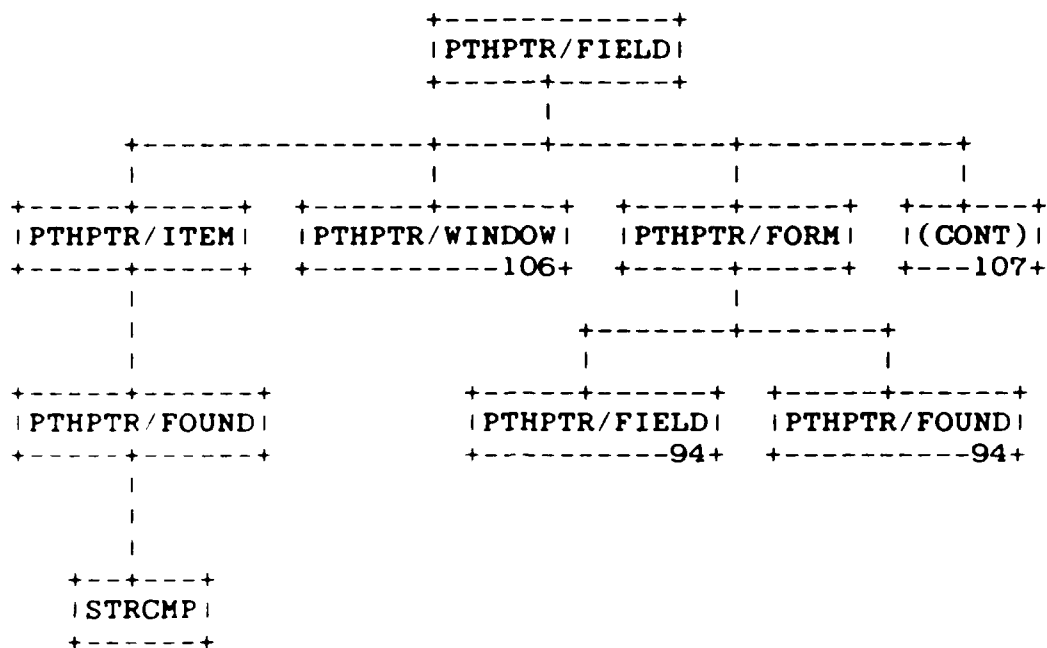
96

```
                    +-------------+
                    |OISCR/PROCWIN|
                    +------+------+
                           |
      +------------+------+------+-----------+
      |            |             |           |
   +--+---+    +---+---+   +------+------+  +-+-+-+
   |(CONT)|    |SPRINTF|   |OISCR/PROCWIN|  |ABS|
   +----81+    +-------+   +-----------81+  +---+
```

97

```
                                +------+
                                |GDVINP|
                                +--+---+
                                   |
     +---------+---------+---+----+--------+--------+
     |         |         |        |        |        |
  +--+---+  +--+---+  +--+---+  +--+--+  +--+---+  +--+---+
  |(CONT)|  |FNFPWN|  |PDVOTP|  |FTELL|  |FCLOSE|  |(CONT)|
  +----83+  +--+---+  +----35+  +-----+  +------+  +---110+
               |
               |
               |
            +--+---+
            |FNFPWN|
            +----97+
```

98

```
                        +-----------+
                        |MONITR/MAIN|
                        +-----+-----+
                              |
      +---------+---------+----+----+---------+---------+
      |         |         |         |         |         |
   +--+---+  +--+--+  +---+---+  +--+---+  +--+---+  +--+---+
   |(CONT)|  |FTELL|  |FPRINTF|  |MEMCPY|  |FWRITE|  |(CONT)|
   +----84+  +-----+  +-------+  +------+  +------+  +---111+
```

```
                              +-----------+
                              |OPNFRM/PARY|
                              +-----+-----+
                                    |
        +-----------+---------------+--+------------+--------------+
        |           |                  |            |              |
     +--+---+    +--+---+        +------+-----+  +-----+------+  +------+------+
     |(CONT)|    |SYSMSG|        |OPNFRM/PWIN|  |OPNFRM/PFRM |  |OPNFRM/PITM |
     +----85+    +----65+        +------+-----+  +--------112+  +--------113+
                                        |
                        +---------------+---+---------+
                        |           |       |         |
                     +--+---+    +--+---+ +--+---+  +--+--+
                     |STRASN|    |MAKFLD| |GATDEF|  |ESCPY|
                     +-------+    +----26+ +----82+  +----2+
```

100

```
                        +---------+
                        |UIS/STRTPD|
                        +----+----·+
                             |
        +---------+--------+--+----+--------+--------+
        |         |        |       |        |        |
    +--+----+ +--+---+ +--+--+ +--+--+ +--+--+ +--+---+
    |SYSMSG| |SIGABT| |MAKPD| |ISEND| |FFBCA| |(CONT)|
    +----65+ +------+ +---61+ +-----+ +-----+ +---114+
```

101

```
                    +------+
                    |COPFRM|
                    +--+---+
                       |
        +---------+---+---+---------+
        |         |       |         |
    +--+---+  +-+-+  +--+---+  +--+---+
    |(CONT)|  |MAX|  |RSVEXP|  |OPNFRM|
    +----90+  +---+  +----92+  +-----9+
```

102
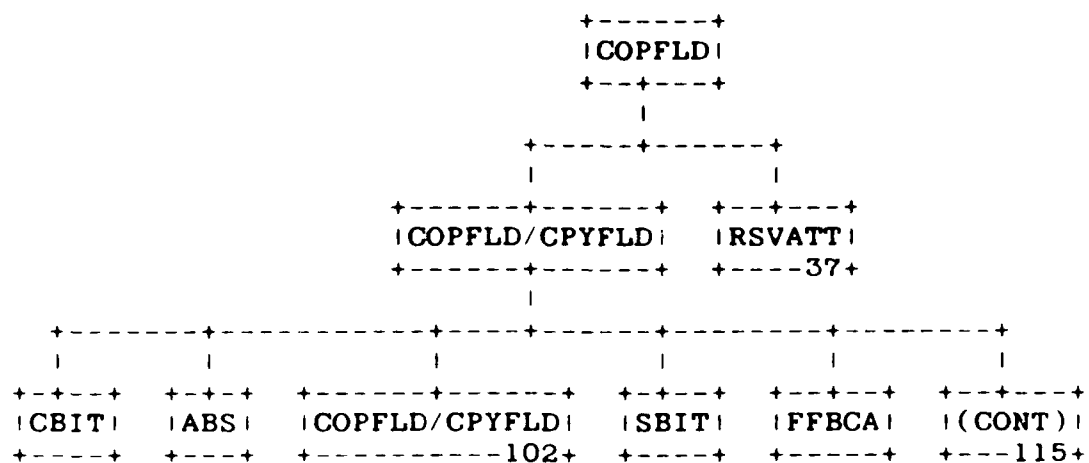
```
                                    +------+
                                    |COPFLD|
                                    +--+---+
                                       |
                              +-----+-------+
                              |             |
                     +------+-------+    +--+---+
                     |COPFLD/CPYFLD|    |RSVATT|
                     +------+------+    +----37+
                            |
     +--------+-----------+----+-------+---------+--------+
     |        |           |            |         |        |
  +--+--+  +-+-+  +-------+-------+  +-+--+  +--+---+  +--+---+
  |CBIT|  |ABS|  |COPFLD/CPYFLD|  |SBIT|  |FFBCA|  |(CONT)|
  +----+  +---+  +----------102+  +----+  +------+  +---115+
```

103

```
                    +-------------+
                    |RSVEXP/BLDEXP|
                    +------+------+
                           |
     +-----------+---------+---+---------+----------+
     |           |             |         |          |
  +-+--+   +------+------+  +---+---+  +--+---+  +--+---+
  |FREE|   |RSVEXP/BLDEXP|  |ISDIGIT|  |STRCHR|  |(CONT)|
  +----+   +----------103+  +-------+  +------+  +---116+
```

104

```
                                +------+
                                |CMPFLD|
                                +--+---+
                                   |
        +-----------+--------++--------+---------+
        |           |        |         |         |
  +-----+-----+  +--+---+  +-+--+  +--+---+  +--+---+
  |CMPFLD/EVAL|  |STRLEN|  |BLEN|  |CANITM|  |(CONT)|
  +--------117+  +------+  +----+  +--+---+  +---118+
                                      |
                 +-------+--------++--------+---------+
                 |       |        |         |        |
             +--+--+  +-+--+  +---+---+  +--+---+  +---+---+
             |CBPTR|  |BLEN|  |STRNLOC|  |MEMSET|  |STRNUPC|
             +-----+  +----+  +-------+  +------+  +-------+
```
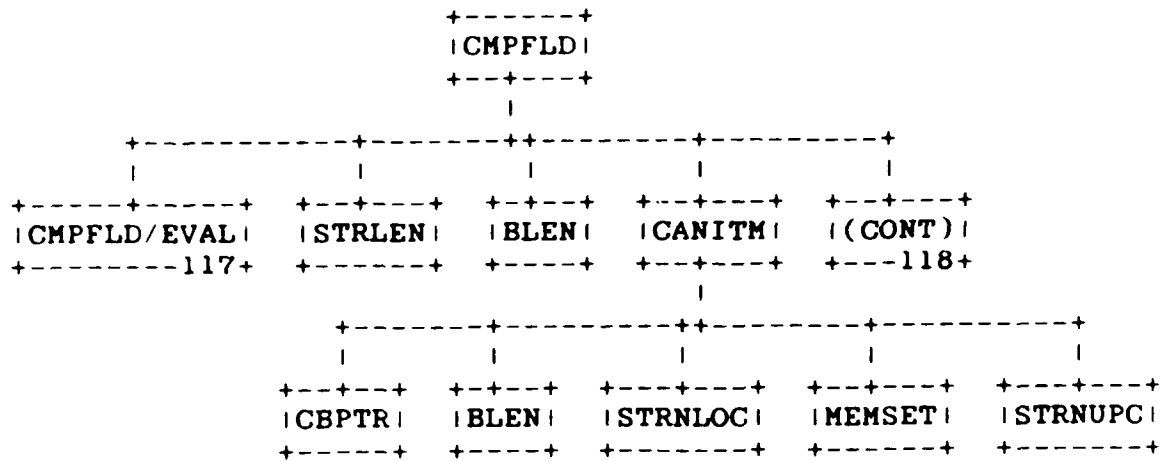
```
                            +------+
                            |CALLFP|
                            +--+---+
                               |
         +---------+---------+---+----+---------+---------+
         |         |         |        |         |         |
     +--+---+  +--+---+  +--+--+  +--+---+  +--+---+  +--+---+
     |(CONT)|  |PMSGLS|  |PDATA|  |OUTSCR|  |OPNLDV|  |(CONT)|
     +----93+  +----88+  +---34+  +----46+  +--+---+  +---119+
                                               |
                                   +---------+---------+
                                   |         |         |
                               +--+---+  +--+---+  +--+---+
                               |STUPFP|  |MAKFPD|  |MEMCPY|
                               +----26+  +----43+  +------+
```

3-460

106

```
        +--------------+
        |PTHPTR/WINDOW |
        +------+-------+
               |
        +------+-------+
        |              |
+-------+------+  +-----+------+
|PTHPTR/FIELD |  |PTHPTR/FOUND|
+----------94+  +----------94+
```

```
                    +-------------+
                    |PTHPTR/FIELD|
                    +-----+-------+
                          |
      +----------+-------+--+------------+              +
      |          |          |            |
  +--+---+   +-+-+   +-----+------+   +--+---+
  |(CONT)|   |MIN|   |PTHPTR/ARRAY|   |STRCMP|
  +----94+   +---+   +-----+------+   +------+
                          |
             +-------+-------+
             |               |
      +-----+------+   +-----+------+
      |PTHPTR/FIELD|   |PTHPTR/FOUND|
      +---------94+   +---------94+
```
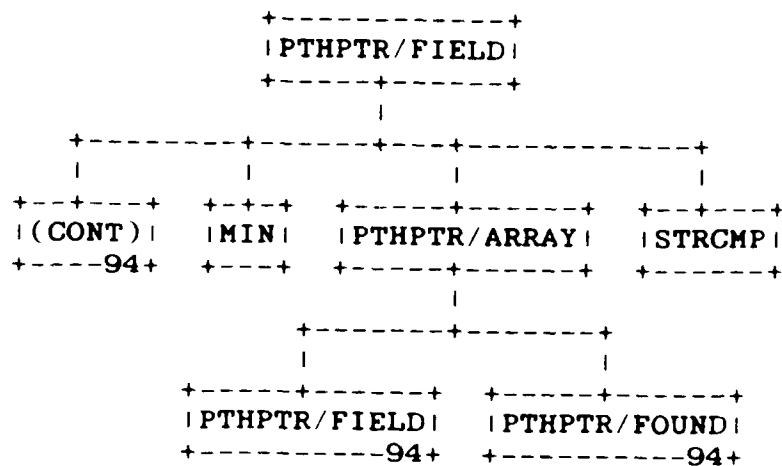
108

```
                          +------------+
                          |OISCR/FVTBUF|
                          +-----+------+
                                |
          +------------+------+------+-----------+
          |            |             |           |
       +--+---+  +-----+------+  +---+---+  +-----+------+
       |(CONT)|  |OISCR/ADDCMD|  |SPRINTF|  |OISCR/DSPSCR|
       +----95+  +-----+------+  +-------+  +--------120+
                       |
                  +----+----+
                  |         |
               +--+---+  +--+---+
               |MEMCPY|  |PDVOTP|
               +------+  +----35+
```

END
8-87
DTIC

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963 A

```
                    +-------------+
                    |OISCR/PROCFLD|
                    +------+------+
                           |
        +------------+-----+-----+------+-------+
        |            |           |      |       |
    +--+---+    +------+------+  +-+-+  +-+-+  +--+---+
    |(CONT)|    |OISCR/PROCFLD|  |ABS|  |MIN|  |(CONT)|
    +----95+    +----------95+  +---+  +---+  +---121+
```

110

```
                        +------+
                        |GDVINP|
                        +--+---+
                           |
      +---------+---------+---------+---------+
      |         |         |         |         |
   +--+---+  +--+---+  +--+---+  +--+--+  +---+---+
   |(CONT)|  |MEMCPY|  |STRLEN|  |INSCR|  |GVTICMD|
   +----97+  +------+  +------+  +--+--+  +-------+
                                    |
          +-----------+-------+-+---------+---------+
          |           |       |           |         |
   +-----+------+  +--+---+  +--+---+  +--+---+  +--+---+
   |OISCR/EVTBUF|  |FUISWN|  |SYSMSG|  |FREMSG|  |(CONT)|
   +--------122+  +------+  +----65+  +------+  +---123+
```
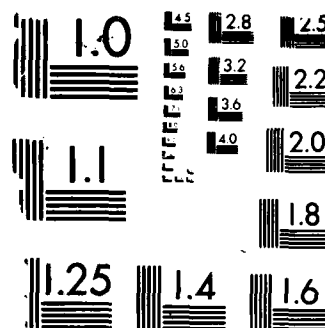
111

```
                      +----------+
                      |MONITR/MAIN|
                      +----+-----+
                           |
      +---------+--------+---+-----+-------+--------+
      |         |        |         |       |        |
  +--+---+   +-+-+   +---+---+   +--+--+  +-+--+  +--+---+
  |(CONT)|   |MIN|   |SPRINTF|   |NSEND|  |PUTC|  |(CONT)|
  +----98+   +---+   +-------+   +-----+  +----+  +---124+
```

112

```
                              +-----------+
                              |OPNFRM/PFRM|
                              +-----+-----+
                                    |
          +-----------+-----------+-----------+-----------+
          |           |           |           |           |
      +--+---+    +--+---+    +--+---+    +--+---+    +--+---+
      |COPFLD|    |MAKFLD|    |SYSMSG|    |OPNFRM|    |GOFPTR|
      +---102+    +----26+    +----65+    +-----9+    +-----9+
```

```
                        +-----------+
                        |OPNFRM/PITM|
                        +-----+-----+
                              |
       +----------+---------+----+----+---------+----------+
       |          |         |         |         |          |
   +--+---+   +--+---+   +--+---+   +--+---+   +--+---+   +--+---+
   |MEMCMP|   |MEMCPY|   |SYSMSG|   |MALLOC|   |STRLEN|   |(CONT)|
   +------+   +------+   +----65+   +------+   +------+   +---125+
```

114

```
                          +----------+
                          |UIS/STRTPD|
                          +----+-----+
                               |
      +----------+----------+---+----+---------+----------+
      |          |          |        |         |          |
  +--+---+   +--+---+   +--+---+   +--+--+   +--+---+   +--+---+
  |(CONT)|   |STRLEN|   |FCLOSE|   |FOPEN|   |PMSGLS|   |(CONT)|
  +---100+   +------+   +------+   +-----+   +----88+   +---126+
```

```
                        +--------------+
                        |COPFLD/CPYFLD|
                        +------+------+
                               |
        +---------+--------+---+---+--------+--------+
        |         |        |       |        |        |
     +--+---+  +--+--+  +--+--+  +--+---+  +-+-+--+  +--+---+
     |(CONT)|  |PBPTR|  |CBPTR|  |MEMCPY|  |FREE|  |(CONT)|
     +---102+  +-----+  +-----+  +------+  +----+  +---127+
```

3-470

```
            +--------------+
            |RSVEXP/BLDEXP |
            +------+-------+
                   |
    +----------+-------+----+---------+
    |          |            |         |
  +--+---+   +--+---+    +--+---+   +--+---+
  |(CONT)|   |PTHPTR|    |SYSMSG|   |MALLOC|
  +---103+   +----62+    +----65+   +------+
```

117

```
                        +----------+
                        |CMPFLD/EVAL|
                        +-----+-----+
                              |
      +----------+-----------++-----------+----------+
      |          |           |            |          |
   +-+--+    +---+---+   +------+-----+  +--+---+  +--+---+
   |FREE|    |ISDIGIT|   |CMPFLD/EVAL|  |MEMCPY|  |(CONT)|
   +----+    +-------+   +--------117+  +------+  +---128+
```

118

```
                        +------+
                        |CMPFLD|
                        +--+---+
                           |
   +-----------+---------+----+----+--------+----------+
   |           |         |         |        |          |
+--+---+    +--+---+   +--+---+   +-+--+   +--+---+   +--+--+
|(CONT)|    |MEMCPY|   |SYSMSG|   |FREE|   |MEMSET|   |CBPTR|
+---104+    +------+   +----65+   +----+   +------+   +-----+
```

119

```
                              +------+
                              |CALLFP|
                              +--+---+
                                 |
        +---------+---------+----+----+---------+---------+
        |         |         |         |         |         |
    +--+---+  +--+---+  +--+---+  +--+---+  +--+---+  +--+---+
    |(CONT)|  |OPNFRM|  |ONWISC|  |INQLDV|  |INITVT|  |(CONT)|
    +---105+  +-----9+  +----45+  +--+---+  +--+---+  +---129+
                                     |         |
                                     |         |
                                     |         |
                                  +--+---+  +--+---+
                                  |MEMCPY|  |MEMCPY|
                                  +------+  +------+
```
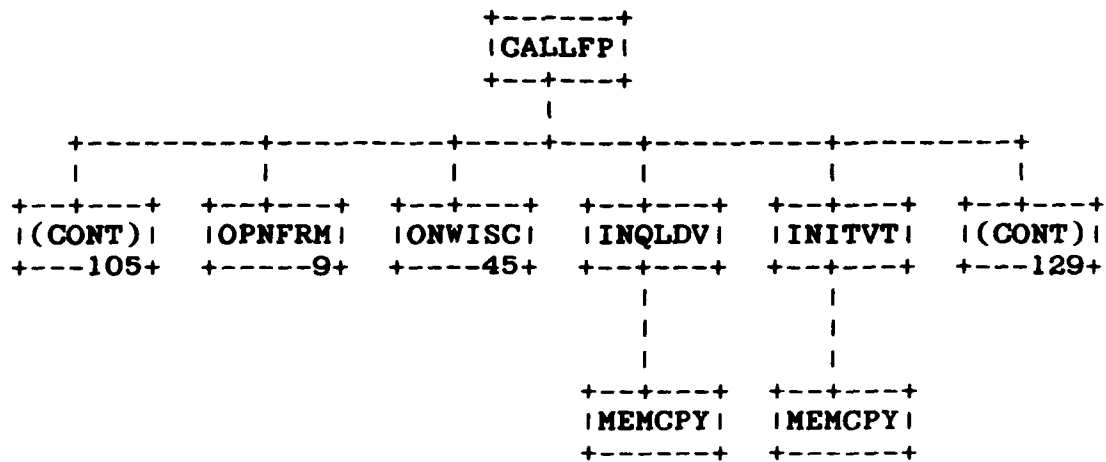
120

```
                              +------------+
                              |OISCR/DSPSCR|
                              +-----+------+
                                    |
        +------------+---------++-----------+----------+
        |            |         |            |          |
  +-----+------+  +--+--+  +---+---+  +----+----+  +-+--+
  |OISCR/CMPALL|  |PDATA|  |SPRINTF|  |LOCALTIME|  |TIME|
  +-----+------+  +---34+  +-------+  +---------+  +----+
        |
  +-----+------+
  |            |
+-----+------+  +--+---+
|OISCR/CMPALL|  |CMPFLD|
+--------120+  +---104+
```

121

```
                    +-------------+
                    |OISCR/PROCFLD|
                    +------+------+
                           |
      +------------+--------+-+--------+---------+
      |            |          |        |         |
  +--+---+  +------+------+  +--+---+  +--+---+  +--+---+
  |(CONT)|  |OISCR/ADDCMD|  |SYSMSG|  |PDVOTP|  |(CONT)|
  +---109+  +---------108+  +----65+  +----35+  +---130+
```

122

```
                         +------------+
                         |OISCR/EVTBUF|
                         +-----+------+
                               |
         +----------+---------+--+-----+---------+--------+
         |          |            |         |        |        |
      +--+---+   +--+---+    +--+--+   +--+---+   +-+--+   +--+---+
      |STRASN|   |MEMSET|    |CBPTR|   |MEMCPY|   |BLEN|   |(CONT)|
      +------+   +------+    +-----+   +------+   +----+   +---131+
```
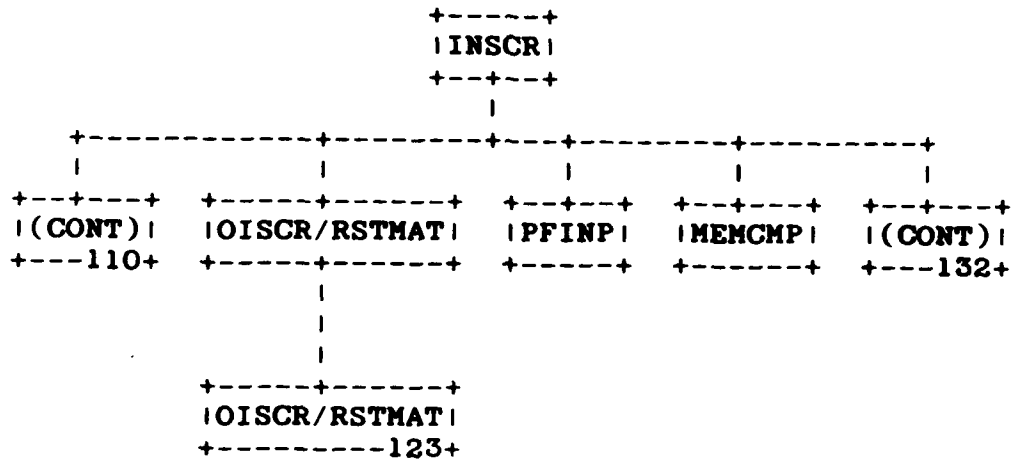
123

```
                              +-----+
                              |INSCR|
                              +--+--+
                                 |
        +------------+---------+---+-----+----------+----------+
        |            |             |          |                |
    +--+---+    +----+-----+    +--+--+    +--+---+        +--+---+
    |(CONT)|    |OISCR/RSTMAT|  |PFINP|    |MEMCMP|        |(CONT)|
    +---110+    +----+-----+    +-----+    +------+        +---132+
                     |
                     |
                     |
               +-----+------+
               |OISCR/RSTMAT|
               +--------123+
```

124

```
                          +-----------+
                          |MONITR/MAIN|
                          +-----+-----+
                                |
        +-----------+-----------+--+----+-----------+-----------+
        |           |              |    |           |           |
    +---+---+   +---+---+      +---+---+ +-+-+   +---+---+   +---+---+
    |(CONT) |   |TRMNAT |      |MEMSET | |RCV|   |FOPEN  |   |(CONT) |
    +---111+|   +-------+      +-------+ +---+   +-------+   +---133+|
```

125

```
          +------------+
          |OPNFRM/PITM |
          +-----+------+
                |
    +-----------+----+----+-----------+
    |                |         |           |
 +--+---+       +--+---+   +--+---+    +--+--+
 |(CONT)|       |MAKFLD|   |GATDEF|    |ESCPY|
 +---113+       +----26+   +----82+    +----2+
```

126

```
                      +----------+
                      |UIS/STRTPD|
                      +----+-----+
                           |
    +-----------+--------+----+----+--------+---------+
    |           |        |         |        |         |
 +--+---+   +---+---+  +-+--+  +---+---+  +--+---+  +-+---+
 |(CONT)|   |SPRINTF|  |FREE|  |FSEARCH|  |STRCMP|  |(CONT)|
 +---114+   +-------+  +----+  +-------+  +------+  +---134+
```

127

```
                    +--------------+
                    |COPFLD/CPYFLD |
                    +------+-------+
                           |
       +----------+--------+--------+----------+
       |          |        |        |          |
   +--+---+    +-+--+   +--+---+  +--+---+   +--+---+
   |(CONT)|    |BLEN|   |STRASN|  |SYSMSG|   |MALLOC|
   +---115+    +----+   +------+  +----65+   +------+
```

128

```
                        +------------+
                        |CMPFLD/EVAL |
                        +-----+------+
                              |
        +-----------+---------+--+--------+---------+---------+
        |           |            |        |         |         |
    +--+---+    +---+---+    +--+---+  +--+--+   +--+--+   +--+---+
    |(CONT)|    |SPRINTF|    |STRLEN|  |CBPTR|   |ESCPY|   |(CONT)|
    +---117+    +-------+    +------+  +-----+   +----2+   +--135+
```

129

```
                              +------+
                              |CALLFP|
                              +--+---+
                                 |
     +--------------+-----------+----+--------------+----------+
     |              |           |         |         |          |
 +--+---+      +--+---+    +-+-+   +--+---+   +--+---+   +--+---+
 |(CONT)|      |GWINDO|    |MIN|   |GETCUR|   |MEMCPY|   |(CONT)|
 +---119+      +--+---+    +---+   +---136+   +------+   +---137+
                  |
         +-----------+---------+
         |           |         |
     +--+---+    +--+---+   +--+---+
     |ESCPY |    |PTHPTR|   |MEMCPY|
     +----2+    +----62+   +------+
```

130

```
                        +-------------+
                        |OISCR/PROCFLD|
                        +------+------+
                               |
          +----------+---------+---+-------------+
          |          |             |             |
      +--+---+    +--+---+      +---+---+    +-----+------+
      |(CONT)|    |STRLEN|      |SPRINTF|    |OISCR/GATINF|
      +---121+    +------+      +-------+    +-----+------+
                                                  |
                                            +----+----+
                                            |         |
                                        +--+---+   +--+---+
                                        |MABSAT|   |STRASN|
                                        +----39+   +------+
```
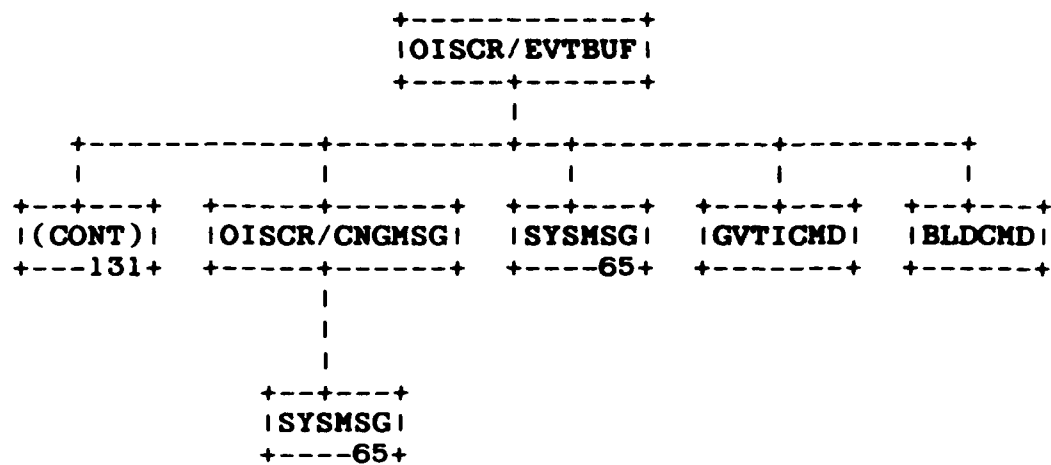
131
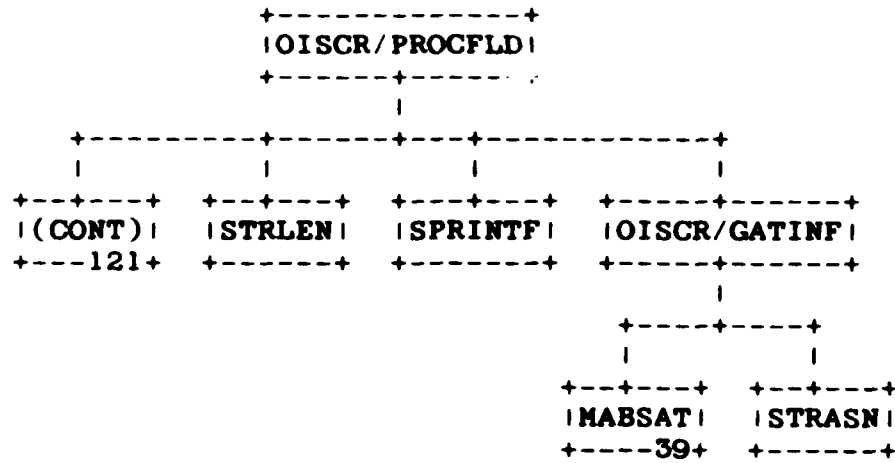
```
                    +------------+
                    |OISCR/EVTBUF|
                    +-----+------+
                          |
     +-----------+--------+--------+---------+
     |           |        |        |         |
  +--+---+    +--+---+  +--+---+  +--+--+  +--+---+
  |(CONT)|    |ISPRINT| |FNFPWN|  |MATOI|  |(CONT)|
  +---122+    +-------+ +----97+  +-----+  +---138+
```

132

```
                        +-----+
                        |INSCR|
                        +--+--+
                           |
      +-----------+--------+----+-----------+
      |           |             |           |
   +--+---+    +--+---+    +-----+------+  +--+---+
   |(CONT)|    |PMSGLC|    |OISCR/FVTBUF|  |DSPMSG|
   +---123+    +----46+    +----------81+  +------+
```

133
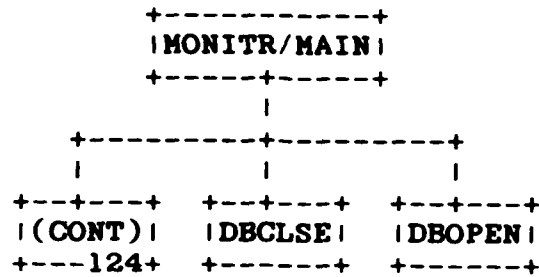
```
                +-----------+
                |MONITR/MAIN|
                +-----+-----+
                      |
        +-------------+-----------+
        |             |           |
    +--+---+      +--+---+     +--+---+
    |(CONT)|      |DBCLSE|     |DBOPEN|
    +---124+      +------+     +------+
```

```
                    +----------+
                    |UIS/STRTPD|
                    +----+-----+
                         |
              +--------++--------+
              |         |        |
          +--+---+  +--+--+  +--+---+
          |(CONT)|  |ESCPY|  |MEMCMP|
          +---126+  +----2+  +------+
```

```
                    +-----------+
                    |CMPFLD/EVAL|
                    +----+----+
                         |
        +---------+---+----+--------+
        |         |        |        |
    +--+---+  +--+---+  +-+--+  +--+---+
    |(CONT)|  |MALLOC|  |BLEN|  |SYSMSG|
    +---128+  +------+  +----+  +----65+
```

136

```
                              +------+
                              |GETCUR|
                              +--+---+
                                 |
        +----------+-----------++-----------+---------+
        |          |           |            |         |
    +--+---+   +--+---+   +------+------+  +--+---+  +--+---+
    |MALLOC|   |SPRINTF|   |GETCUR/CONCAT|  |ACRPOS|  |(CONT)|
    +------+   +------+   +------+------+  +------+  +---139+
                                 |
                            +----+----+
                            |         |
                        +--+---+   +--+---+
                        |MEMCPY|   |STRLEN|
                        +------+   +------+
```
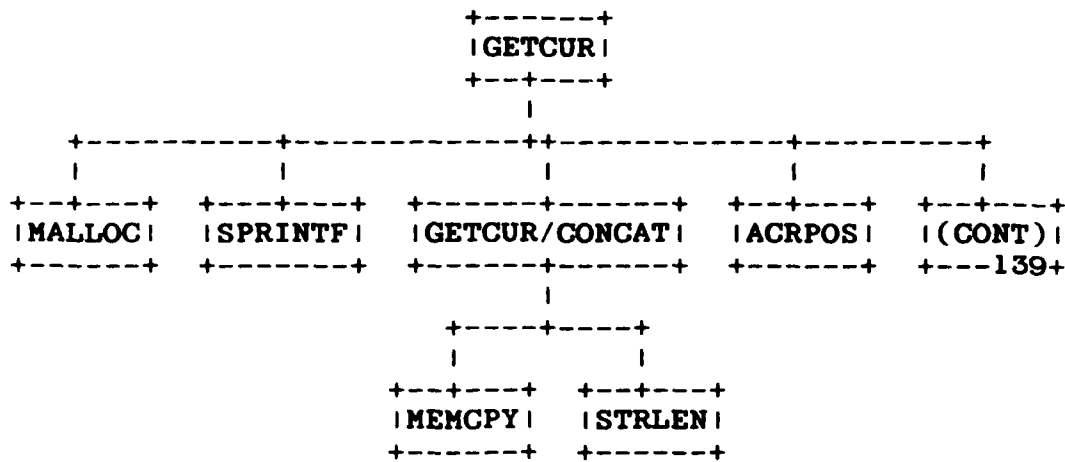
137

```
                        +------+
                        |CALLFP|
                        +--+---+
                           |
      +---------+------+------+---------+
      |         |      |      |         |
  +--+--+   +--+---+    +--+---+   +--+---+
  |(CONT)|  |GDATLN|    |CLSFRM|   |ADDFRM|
  +---129+  +---140+    +--+---+   +----90+
                           |
      +--------+--------+----+----+---------+---------+
      |        |        |         |         |         |
  +--+--+  +--+---+  +--+---+  +--+---+  +--+---+  +--+---+
  |ESCPY|  |STRUPC|  |GOFPTR|  |SYSMSG|  |DELFLD|  |MEMCPY|
  +----2+  +------+  +-----9+  +----65+  +----30+  +------+
```

138

```
                        +-----------+
                        |OISCR/EVTBUF|
                        +-----+-----+
                              |
      +-----------+-----------+--+----------+----------+
      |           |              |          |          |
  +--+---+   +-----+------+   +--+---+   +---+---+   +--+---+
  |(CONT)|   |OISCR/CNGMSG|   |SYSMSG|   |GVTICMD|   |BLDCMD|
  +---131+   +-----+------+   +----65+   +-------+   +------+
                   |
                   |
                   |
               +--+---+
               |SYSMSG|
               +----65+
```

```
                          +-------+
                          |GETCUR |
                          +--+----+
                             |
   +---------+---------+-----+---+---------+---------+
   |         |         |         |         |         |
+--+---+  +--+---+  +--+--+  +--+---+  +--+---+  +--+---+
|(CONT)|  |MEMSET|  |FREE |  |SYSMSG|  |MEMCPY|  |CURPOS|
+---136+  +------+  +-----+  +----65+  +------+  +---141+
```

140

```
                          +------+
                          |GDATLN|
                          +--+---+
                             |
        +---------+---------+---------+-------------+
        |         |         |         |             |
    +--+--+   +--+---+   +-------+-------+      +--+---+
    |ESCPY|   |PTHPTR|   |GDATLN/GBUFLN|      |MEMCPY|
    +----2+   +----62+   +------+------+      +------+
                                |
                         +-----+-----+
                         |           |
                  +------+------+   +-+-+--+
                  |GDATLN/GBUFLN|   |BLEN |
                  +--------140+    +----+
```

141

```
              +------+
              |CURPOS|
              +--+---+
                 |
                 |
                 |
           +-----+------+
           |CURPOS/FNDCP|
           +-----+------+
                 |
       +---------++---------+
       |         |          |
    +--+--+ +----+-----+ +--+---+
    |ABS | |CURPOS/FNDCP| |ACRPOS|
    +---+  +--------141+ +------+
```

## 3.11  Program Listings Comments

This information is contained in the Module Descriptions in section 3.10.

## SECTION 4

### QUALITY ASSURANCE PROVISIONS

#### 4.1  Introduction and Definitions

"Testing" is a systematic process that may be preplanned
and explicitly stated.  Test techniques and procedures may be
defined in advance, and a sequence of test steps may be
specified.  "Debugging" is the process of isolation and
correction of the cause of an error.

"Antibugging" is defined as the philosophy of writing
programs in such a way as to make bugs less likely to occur and
when they do occur, to make them more noticeable to the
programmer and the user.  In other words, as much error checking
as is practical and possible in each routine should be
performed.

#### 4.2  Computer Programming Test and Evaluation

The quality assurance provisions for test consists of the
normal testing techniques that are accomplished during the
construction process. They consist of design and code
walk-throughs, unit testing, and integration testing. These
tests are performed by the design team.  Structured design,
design walk-through and the incorporation of "antibugging"
facilitate this testing by exposing and addressing problem areas
before they become coded "bugs."

# END

# 8-87

# DTIC